UNDERGRADUATE LAW REVIEW AT UC SAN DIEGO

SAM DAFTARY

Man with Machine: The Unaddressed Copyright Issues of Mixed Musical Works

ABSTRACT. The copyrightability of mixed musical works, which contain a blend of human and generative AI elements, is an issue of increasing prevalence in copyright law. While there has been some discussion on the copyright status of fully generative AI works, this mainly resides in state law, and much of the federal policy found in Copyright Guides published by the United States Copyright Office is a non-binding opinion. Additionally, the same circuit courts contradict themselves, as seen with the differing views on the fair use of generative AI works in the Ninth Circuit Cases of *Bartz v. Anthropic PBC* (2024) and *Kadrey v. Meta* (2023). These issues combine to create a copyright "Dead Man's Land" where the U.S. Copyright Office is forced to inspect mixed musical works on a case-by-case basis: an inefficient and ineffective mess for the modern day. This paper proposes that Congress pass legislation further itemizing the components of mixed musical works and only allowing generative AI to be used in one such component, alongside integrating state legislation. This policy would allow the U.S. Copyright Office to evaluate all mixed musical works under a unified framework. With the increase of artists creating mixed musical works, this solution only becomes more necessary as time progresses.

AUTHOR. Sam Daftary is a second-year Political Science student focusing on Public Law at the University of California, San Diego. He is interested in pursuing law school after completing his undergraduate degree. He would like to thank his editors, Jeanne Lee and Taylor Spencer, for their feedback, aid, and understanding at every stage, Professor Maysa Nichter for extensively peer-reviewing this text, his friends and family for encouraging him to pursue this paper, and his two dogs, Axel and Viola.

INTRODUCTION

Ray Kurzweil created one of the first musical composition AI models for the CBS show "I've Got a Secret" in 1965.[1] This model used a rule-based system (e.g., pattern recognition) to make new musical compositions based on existing compositions.[2] In 1983, Yamaha Corporation's Kansei Music System solved the transcription problem, accurately recording a performance into musical notation as it is played, for simpler melodies in these rule-based systems.[3] Companies began to develop more complex AI systems, pushing the boundaries of technology in the creation of original musical compositions. In 2002, the music research team at the Sony Computer Science Laboratory in Paris, led by Francois Pachet, designed the Continuator.[4] This was an algorithm uniquely capable of resuming a composition after a live musician stopped playing. In 2010, AI created fractions of original compositions. The computer cluster Iamus, at Spain's Universidad de Malága, evidenced in its piece "Iamus' Opus 1," can generate a fully original piece in a variety of musical styles.[5]

With the advent of generative AI models, music-making AI has reached creation abilities never seen before. Large Language Models (LLMs), a category of deep learning AI models trained on immense amounts of data to understand and generate content, serve as the modern form of music-making technology.[6] LLMs such as Suno AI[7] and Udio create complete compositions and lyrics from text prompts.[8] Suno AI has made a digital audio workstation, Suno Studio, placing AI-powered generation at the center of

[1] Lauren Clason, *Ray Kurzweil*, National Science and Technology Medals Foundation (Sept. 22, 2020), https://nationalmedals.org/laureate/ray-kurzweil/.
[2] Allen Newell & Herbert A. Simon, *The Logic Theory Machine—A Complex Information Processing System*, 2 IRE Transactions on Info. Theory 61 (1956).
[3] Haruhiro Katayose & Seiji Inokuchi, *The Kansei Music System*, 13 Comput. Music J. 72, 73–74 (1989).
[4] François Pachet, *The Continuator: Musical Interaction with Style*, 32 J. New Music Rsch. 333, 333 (2003).
[5] Gustavo Diaz-Jerez, *Composing with Melomics: Delving into the Computational World for Musical Inspiration*, 21 Leonardo Music J. 13, 14 (2011).
[6] Cole Stryler, *What Are Large Language Models (LLMs)?*, IBM (Dec. 22, 2025), https://www.ibm.com/think/topics/large-language-models.
[7] Team Suno, *Introducing v4*, Suno (Nov. 19, 2024), https://suno.com/blog/v4.
[8] Team Udio, *AI and the Future of Music*, Udio (June 25, 2024), https://www.udio.com/blog/ai-and-the-future-of-music.

music creation.[9] AI artists such as Xania Monet and Cain Walker are making headway on Billboard charts, showing the widespread use of AI in the music industry.[10]

These technological advancements have created a legal copyrightability problem with musical works, as they inherit all of generative AI's legal issues. The use of extensive training datasets is the main cause of copyright issues for generative AI models. In order for LLMs to create complex outputs, they require datasets of information relating to the intended purpose of each individual model.[11] Google Gemini is one such example, which relies on web access to compile and generate new content.[12] In *Andersen v. Stability AI Ltd.* (2023), Runway AI allegedly used the LAION-5B dataset, which includes 5.85 billion images, to train their Stable Diffusion image generation LLM. Andersen claimed Runway AI's conduct constituted copyright infringement, as many of the 5 billion images included in the dataset were copyrighted.[13] Furthermore, the U.S. Copyright Office rejected previous copyright applications of generative AI works, such as "Zarya of the Dawn," due to a lack of human authorship.[14] As such, musical works made by generative AI would too be rejected for lacking human authorship.

However, mixed musical works remain a legal enigma. Works containing both AI and human contributions slip into a legal grey area not yet addressed by legislation or federal courts. While musical works created entirely by generative AI are partially addressed by court rulings and the U.S. Copyright Office's acting policy, mixed musical works have no formal solution to parse either their copyrightability or distribution.

This paper addresses the uncertain copyright position of mixed musical works. Part I will discuss the origins of relevant copyright law, in particular the Copyright Act of 1976, as well as the current state of copyright law in relation to generative AI. Part II will analyze previously proposed solutions and explain why retrofitting these procedures to cover mixed musical works is ineffective, either because of the mechanical differences of generative AI or due to contradictions in their applications across

[9] Team Suno, *Introducing Suno Studio*, Suno (Sept. 25, 2025), https://suno.com/blog/suno-studio.
[10] Glenn Peoples, *AI Artists May Be on the Charts, but They're Not That Popular - Yet*, Billboard (Nov. 14, 2025), https://www.billboard.com/pro/ai-music-artists-charts-popular/.
[11] Humza Naveed et al., *A Comprehensive Overview of Large Language Models,* 16 ACM Transactions on Intelligent Sys. Tech. 1, 4-5 (2025).
[12] Gemini, *Learn about Gemini, the Everyday AI Assistant from Google*, https://gemini.google/about/ (last visited Feb. 12, 2026).
[13] Andersen v. Stability AI Ltd., No. 3:23-cv-00201 (Cal. July 17, 2024) (CourtListener).
[14] Letter from U.S. Copyright Office to Van Lindberg re: Zarya of the Dawn, U.S. Copyright Office No. VAu001480196 (Feb. 23, 2023).

different states. Finally, Part III proposes a solution utilizing elements of previous legal frameworks to itemize mixed musical works. Specifically, the solution implements the de minimis principle: a set of guidelines to allow a mixed musical work to be its own distributable/copyrightable piece.

I. THE CURRENT LEGAL SPACE OF COPYRIGHT, GENERATIVE AI, AND MUSIC

A. Origins of Copyright Law

U.S. copyright law derives from the "Progress" Clause within Article 1, Section 8 of the Constitution. This gave Congress the power to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[15] From this provision, Congress could create intellectual property and copyright law, prompting the Copyright Act of 1790 and subsequent revisions. The "Progress" Clause also placed intellectual property law under federal jurisdiction. While states interpret and apply these laws, federal preemption prevents state laws from contradicting or interfering with federal copyright law.[16]

The latest major revision to copyright law was the Copyright Act of 1976, which serves as the basis for all modern copyright law. Before this Act, copyright and intellectual property law were "not primarily for the benefit of the author, but primarily for the benefit of the public."[17] However, in 1961, Congress identified the need to update copyright legislation given changing technology.[18] When drafting the Copyright Act of 1976, Congress considered two questions: "how much will the legislation stimulate the producer and so benefit the public," and "how much will the monopoly granted be detrimental to the public?"[19] Congress wanted to ensure that granting these exclusive rights would confer a benefit upon the public that outweighed the evils of temporary copyright monopolies. The Copyright Act of 1976 introduced a

---

[15] U.S. Const. art. I, § 8, cl. 8.

[16] Cong. Rsch. Serv., *Overview of Supremacy Clause*, Constitution Annotated, https://constitution.congress.gov/browse/essay/artVI-C2-1/ALDE_00013395/ (last visited Apr. 19, 2026).

[17] Benjamin W. Rudd, *Notable Dates in American Copyright 1783–1969*, U.S. Copyright Office 137, 141 (1971).

[18] Staff of H. Comm. on the Judiciary, 87th Cong., Report of Register of Copyrights on the General Revision of U.S. Copyright Law (Comm. Print 1961).

[19] H.R. Rep. No. 1108 (1909) (Conf. Rep.).

variety of provisions to protect the rights of authors and create greater flexibility and compromise between the rights of publishers, authors, and the public.

Section 102 of the Copyright Act of 1976 classifies works eligible for copyright protection.[20] It states that "original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device" are eligible for copyright protection.[21] These works are further defined within the act as the following: literary works, musical works, dramatic works, pantomimes and choreographic works, pictorial, graphic, and sculptural works.[22]

Section 102 expands copyright protection to unpublished works. Previously, under the Copyright Act of 1909, federal statutory copyright protection was only attachable to original works when they were both (1) published and (2) had a notice of copyright affixed.[23] As a result, states enacted copyright laws to fill this gap in protection for unpublished works.[24] Additionally, works that were neither published nor registered were protected under common law in perpetuity as long as they remained unpublished and unregistered.[25] However, if a work was "published" without an affixed notice of copyright, then the Copyright Act of 1909 provided no protection.[26] Rather, the work became part of the public domain. However, Section 102 of the Copyright Act of 1976 extends protection to original works fixed in a tangible medium of expression.[27] The word "fixed" broadened the scope of federal statutory copyright protection from purely "published" works to those that were cemented in a particular form of media "from which they can be perceived, reproduced, or otherwise communicated."[28]

There are exceptions to copyright protection. Section 102(b) states that copyright protection for original works of authorship cannot extend to "any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the

---

[20] Copyright Act of 1976, 17 U.S.C. § 102 (2012).
[21] *Id.*
[22] *Id.*
[23] Copyright Act of 1909, Pub. L. No. 60-349, 35 Stat. 1075 (repealed 1976).
[24] *Id.*
[25] U.S. Copyright Office, *Certain Unpublished, Unregistered Works Enter Public Domain* (Jan. 13, 2003), https://www.copyright.gov/pr/pdomain.html.
[26] *Id.*
[27] 17 U.S.C. § 102.
[28] Robert W. Kastenmeier, *General Revision of the Copyright Law, Title 17 of the United States Code* (Sept. 3, 1976), https://www.fordlibrarymuseum.gov/sites/default/files/pdf_documents/library/document/0055/12012110.pdf.

form in which it is described, explained, illustrated, or embodied in such work."[29] This codified the ruling in *Baker v. Selden* (1880). In this case, Charles Selden obtained a copyright for his book "Selden's Condensed Ledger, or Bookkeeping Simplified," explaining a particular system of bookkeeping.[30] Baker produced a similar text that utilized a comparable system of bookkeeping in 1867.[31] Selden's widow, Elizabeth Selden, filed a lawsuit against Baker for copyright infringement, which eventually came before the Supreme Court.[32] The Court ruled in favor of Baker, stating that holding copyright protection over a book does not give the author the right to exclude others from practicing what was described in the book.[33] This ruling implemented the idea-expression distinction: a legal doctrine limiting the scope of copyright to only the expression/manifestation of ideas, and not the ideas themselves.[34]

For works eligible for copyright protection, Section 106 of the Copyright Act of 1976 grants copyright holders five exclusive rights: (1) the right to reproduce their works into copies/phonorecords (a series of musical, spoken or other sounds fixed in a recording medium, such as a CD or digital file); (2) the right to create derivative works of their original works; (3) the right to publicly sell, lease, or rent out copies/phonorecords of their works; (4) the right to perform their works publicly; and (5) the right to display the work publicly.[35] The Digital Performance Right in Sound Recordings Act of 1995 added the exclusive right of performing a sound recording by means of digital audio (such as through a concert performance/DJ set).[36]

The codification of the Fair Use Policy was a significant provision of the Copyright Act of 1976. This affirmative defense to copyright infringement entails that borrowing portions of other copyrighted works without permission is not infringement if it falls under fair use. Section 107 of the 1976 Copyright Act outlines four factors that determine fair use. These factors are (1) the purpose and character of the usage (whether it is commercial or educational, transformative or reproductive, political, etc.), (2) the nature of the copyrighted work (fictional, factual, degree of creativity,

[29] Copyright Act of 1976, 17 U.S.C. § 102(b) (2012).
[30] Baker v. Selden, 101 U.S. 99 (1879).
[31] Pam Samuelson, *The Story of Baker v. Selden*, Berkeley Ctr. for L. & Tech. (2005).
[32] *Id.*
[33] *Baker*, 101 U.S. at 99.
[34] *Id.*
[35] 17 U.S.C. § 106.
[36] Digital Performance Right in Sound Recordings Act of 1995, Pub. L. No. 104-39, 109 Stat. 336 (codified as amended at 17 U.S.C. §§ 114-116).

etc.), (3) the amount and substantially of the portion of the original work used, and (4) the effect of the use upon the market (or potential market) for the original work.[37]

The Copyright Act of 1976 also expanded compulsory licensing. Previously, Section 1(e) of the 1909 Copyright Act created a compulsory license to allow anyone to make a mechanical reproduction or phonorecord of a musical composition without the consent of the copyright owner.[38] Those who made such a phonorecord had to adhere to the provisions of the license. Congress worried that without focusing copyright on the people, the law would cause a monopoly over the right to make mechanical reproductions of musical works.[39] Thus, Section 1(e) was designed to allow any person to make "similar use" (broadly defined) of the musical work upon payment of a royalty of two cents for "each such part manufactured."[40]

Section 1(e) of the Copyright Act of 1909 prevents the production of a record at random without the permission of the copyright holder. For an individual to produce a physical copy of a musical work, the copyright holder had to file a notice of use with the Copyright Office indicating that the musical work was mechanically reproduced.[41] Additionally, the individual reproducing the work had to notify the copyright owner that they intended to use the license via a Notice of Intent (NOI).[42] The individual also had to file a copy of the NOI with the Copyright Office.[43] Without going through these steps, a mechanical reproduction of a musical work by a party separate from the copyright holder would constitute copyright infringement, much like it would under Section 501 of modern copyright law.[44] This version of compulsory licensing limited the amount of money a musician could make selling mechanical copies of their work while still allowing others to copy musical works without price restrictions.

Section 115 of the Copyright Act of 1976 added new clarifications and conditions to compulsory licensing.[45] Examples of these clarifications include: (1) compulsory licenses only become available once a phonorecord has been publicly distributed in the

[37] 17 U.S.C. § 107.

[38] Staff of H. Comm. on the Judiciary, 87th Cong., Rep. of Register of Copyrights on the General Revision of U.S. Copyright Law (Comm. Print 1961).

[39] Section 115 of the Copyright Act: In Need of an Update? Before the Subcomm. on Cts., the Internet, and Intell. Prop. of the H. Comm. on the Judiciary, 108th Cong., 4–17 (2004) (statement of Marybeth Peters, Register of Copyrights, Copyright Office of the United States, The Library of Congress).

[40] *Id.*

[41] Copyright Act of 1909, Pub. L. No. 60-349, 35 Stat. 1075 (repealed 1976).

[42] *Id.*

[43] *Id.*

[44] 17 U.S.C. § 501.

[45] *Id.* at § 115.

U.S. with the copyright holder's permission;[46] (2) the license is available to those mainly intending to publicly distribute phonorecords for private use;[47] (3) licensees are unable to duplicate sound recordings embodying musical works without authorization;[48] (4) a compulsory license may be terminated for failing to pay monthly royalties within 30 days of receiving a written notice from the copyright holder advising the user of such.[49]

Other adjustments to the compulsory mechanical license all fit the general philosophy of these major copyright acts: modernizing copyright law to technological development. The other three compulsory licences of the Copyright Act of 1976 follow this philosophy, but with a different focus. Section 111 involves cable television retransmissions of over-the-air broadcasts.[50] Section 116 deals with the replacement of the "jukebox exemption" of the 1909 Copyright Act with a statutory license.[51] Section 118 establishes compulsory licensing for public broadcasters to use published nondramatic works and published pictorial, graphic, and sculptural works in the course of certain non-commercial broadcasting activities.[52] These changes reflect how the development of new art forms and transmission methods prompts revisions to copyright law.

Congress frequently amends provisions of the Copyright Act of 1976. The last major amendments were the Satellite Television Community Protection and Promotion Act of 2019 and the Copyright Alternative in Small-Claims Enforcement Act of 2020 (CASE Act). The former covered the eligibility to receive signals under a distant-signal satellite license, serving as an amendment to Section 119 of Title 17 (an alternate name for the Code of Copyright in the U.S., based on the Copyright Act of 1976).[53] The CASE Act established a small claims court-type system within the Copyright Office where owners could seek damages under $30,000 for copyright violations.[54]

---

[46] 17 U.S.C. § 115(b).
[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *Id.* § 111.
[51] *Id.* § 116.
[52] *Id.* § 118(b).
[53] Satellite Television Community Protection and Promotion Act, Pub. L. No. 116-94, 133 Stat. 2534 (2019).
[54] Copyright Alternative in Small-Claims Enforcement Act, 17 U.S.C. §§ 1501–1511 (2020).

However, it has been half a decade since the last major amendment to copyright law, and many issues have developed that are unaddressed by federal law. The Copyright Office must create or modify legislation to address these issues.

B. Copyright and Music

The Copyright Act of 1976 was directly influenced by emerging technologies and techniques in the music industry. This paper has already discussed how the compulsory license was created to target the reproduction of musical works into phonorecords.[55] While there is legislation that directly affects musical copyright laws, legal uncertainties remain as a product of these laws not accounting for the advent of mixed musical works.

The Copyright Office defines musical works as a song's underlying composition along with any accompanying lyrics.[56] Section 802.3 of the Compendium of U.S. Copyright Office Practices divides copyrightable musical work authorship into the four main elements of melody, rhythm, harmony, and song lyrics.[57] There are two unique forms of copyright when a song is created. The first type is the aforementioned musical work itself. The second is the sound recording, also known as a phonorecord.[58] Sound recordings are limited to digital audio transmissions, which allows AM/FM radio stations to publicly perform sound recordings without paying royalties or requesting permission.[59] Musical works are entitled to overall greater protection than sound recordings. To make and distribute copies, publicly perform or display, or make derivative works from musical works, one must (1) get a license from the copyright owner, (2) use a statutory license (a license created by operation of law), or (3) have an exemption such as fair use apply.[60]

Certain categories of musical works are considered uncopyrightable. For example, a work is not copyrightable if it is not original to the author or if it contains insufficient expression.[61] Additionally, if a work contains de minimis expression, meaning it does

---

[55] Phonorecords are a series of musical, spoken, or other sounds fixed in a recording medium.
[56] U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* § 802.8(A) (3d ed. 2021).
[57] *Id.* § 802.3.
[58] U.S. Copyright Office, *What Musicians Should Know About Copyright*, https://www.copyright.gov/engage/musicians/ (last visited Apr. 19, 2026).
[59] *Id.*
[60] U.S. Copyright Office, *Musical Works, Sound Recordings, and Copyright* (Feb. 2020), https://www.copyright.gov/music-modernization/sound-recordings-vs-musical-works.pdf.
[61] U.S. Copyright Office, *supra* note 56, at § 313.4(B).

not contain the minimal degree of original creative expression required to satisfy the originality test, then the work is not copyrightable.[62] If a work is entirely composed of common property musical material, such as arpeggios (a type of chord where the notes individually sound in a progressive rising or descending order) or common short musical phrases, then it cannot be copyrightable.[63]

The Copyright Office indicates through legislation that creative expression should remain paramount when evaluating the copyrightability of a musical work. Section 103 of Title 17 exemplifies a desire for creative expression and originality within copyrightable works.[64] Section 103(b) directly states that the copyright in a compilation or derivative work only applies to the material contributed by the authors of such works, not anything that is indistinguishable from the preexisting work on which these derivative works are based.[65] The work must also have a reason to exist separate from these preexisting copyrighted materials.[66]

New cases and legislation have addressed technological innovations in music sharing and streaming. The Supreme Court case *Metro-Goldwyn-Mayer Studios Inc. v. Grokster Ltd.* (2005) addressed direct instances of copyright infringement via file-sharing sites.[67] The Court ruled unanimously that defendants Grokster and Streamcast could be held liable for copyright infringement by allowing users to spread unauthorized copies of copyrighted music through file-sharing software.[68]

The most recent federal acknowledgement of musical innovations comes from the Music Modernization Act (MMA) in 2018. This law was intended to modernize copyright laws for the advent of digital streaming services, create federal copyright terms for older recordings, and ensure proper distribution of royalties for sound recordings.[69] The first section, titled the Musical Works Modernization Act, founded a non-profit governing agency to establish blanket royalty rates through creating a database for owners of mechanical licenses of musical works.[70] This replaced the

[62] U.S. Copyright Office, *Glossary: U.S. Copyright Compendium* (3d ed. 2021).
[63] 37 C.F.R. § 202.1 (2011).
[64] 17 U.S.C. § 103.
[65] *Id.* § 103(b).
[66] U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* § 311.2(B) (3d ed. 2021).
[67] Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913 *passim* (2005).
[68] *Id.*
[69] Orrin G. Hatch-Bob Goodlatte Music Modernization Act, Pub. L. No. 115-264, 132 Stat. 3676 (2018).
[70] *Id*.

previous song-by-song system.[71] The second section, titled the Compensating Legacy Artists for their Songs, Service, and Important Contributions to Society (CLASSICS) Act, expanded copyright protection to sound recordings made before 1972 through February 15, 2067.[72] The final section, titled the Allocation for Music Producers Act, designated that Sound Exchange, the Congressional organization responsible for distributing royalties on sound recordings, would also distribute parts of these royalties to producers, mixers, or sound engineers who were part of the sound recording creation process.[73]

Copyright law must continue evolving to effectively address modern issues in the music industry. As we have seen, there have been many attempts to solve these issues. However, these policies fail to address the most pressing contemporary issue in music: mixed musical works. While there is legal modernization for music streaming, licensing, and music sharing services, federal policy has yet to tackle legislation regarding generative AI. Due to this legislative gap, an outdated legal framework is extended to technologies and works it was not designed to handle. Priorities in music copyright law, such as creativity, create a framework for future legislation.

C. Copyright and Generative AI

There are no federal copyright laws dictating the use of generative AI. State and district courts have addressed these issues with varying levels of success.

1. State Laws regarding Generative AI

One prominent example of state legislation dictating the use of generative AI (especially as it relates to music) is the ELVIS Act. Named after Elvis Presley, the Tennessee state legislature adopted the Ensuring Likeness Voice and Image Security Act to protect the vocal likeness of different artists by prohibiting the usage of AI to mimic an artist's voice without permission.[74] Tennessee was one of the first states to address generative AI in music. However, the ELVIS Act only concerns AI voiceovers, failing to address the totality of mixed musical works.

---

[71] Orrin G. Hatch-Bob Goodlatte Music Modernization Act, Pub. L. No. 115-264, 132 Stat. 3676 (2018).
[72] *Id.* §§ 201–202; 132 Stat. 3676 (2018).
[73] *Id.*
[74] Tenn. Code Ann. § 47-25-1101 (LexisNexis 2024) (Ensuring Likeness, Voice, and Image Security Act).

Another law introduced into the state-level legislature was the Utah Artificial Intelligence Policy Act (UAIPA), signed into law by Governor Spencer Cox in 2024. This act mandated that businesses and individuals in regulated occupations using AI tools in their services must disclose the use of AI at the start of any interaction.[75] The UAIPA also created disclosure requirements for entities using generative AI with customers.[76] While the UAIPA is not directly focused on music, it is one of the first pieces of comprehensive artificial intelligence legislation. This act sets transparency standards that directly reveal AI creations to the public, no matter how minuscule their application.[77] Additionally, the legislature continuously updates the UAIPA, as seen with the passing of amendment S.B. 271 on March 27, 2025, which prohibited unauthorized artificial intelligence impersonations, or "deep fakes."[78] However, much like the ELVIS Act, this law is restricted to Utah. Furthermore, except for the amendment of S.B. 271, the UAIPA also fails to address the issues of mixed musical works. The act only mandates that a mixed musical work indicate when AI is used.[79] The copyright issue remains untouched.

The California AI Transparency Act (AB 853), similar to the UAIPA, was signed into law on September 19, 2024. AB 853 requires large online platforms and websites to reliably indicate whether or not their content is generated by AI, and what model was used.[80] Additionally, AB 853 specified that provenance (origin) markings be placed on authentic human content at the point of creation,[81] requiring recording devices sold in California to include the option to embed such information.[82] Furthermore, the act requires a covered provider of AI technology to make a publicly accessible, free-for-use AI detection tool.[83] Online platforms are expected to use these tools to indicate when AI is used on their websites.[84]

---

[75] Utah Code Ann. § 13-72 (LexisNexis 2024).
[76] *Id.*
[77] A.J. Bahou & Erin J. Illman, *Understanding the Utah AI Act and Newly Effective Amendments: What Your Business Needs to Know*, Nat'l L. Rev. (May 9, 2025), https://natlawreview.com/article/understanding-utah-ai-act-and-newly-effective-amendments-what-your-business-needs.
[78] Utah Artificial Intelligence Policy Act, S.B. 271, 2025 Gen. Sess. (Utah 2025).
[79] Utah Code Ann. § 13-72-203(c)(iv) (LexisNexis 2024).
[80] California AI Transparency Act, S.B. 942, 2023–2024 Reg. Sess. (Cal. Stat. 2024, ch. 291).
[81] *Id.*
[82] *Id.*
[83] *Id.*
[84] *Id.*

These state laws impact the creation of mixed musical works by including human artist protection in an age of generative AI content. Additionally, this legislation addresses some of the issues with mixed musical works, especially the ELVIS Act's prohibition on AI imitations of other artists without their permission. However, given that these acts are state-side, they cannot be enacted broadly. Inconsistency in the application of legal rules regarding copyright feeds back into the issue of case-by-case judgments on mixed works. Leaving the regulations of generative AI to state legislators will lead to a dysfunctional copyright system.

2. Federal Policy on Generative AI

Outside of state legislation, there has been a federal push to address generative AI copyright issues. In *Thaler v. Perlmutter* (2025), Dr. Stephen Thaler, a computer scientist and creator of an LLM called "The Creativity Machine," submitted a copyright registration application to the Copyright Office for artwork named "A Recent Entrance to Paradise."[85] The author of the artwork was the LLM. The Copyright Office denied this application, reasoning that a "human being did not create the work," so copyright protections did not apply.[86] The Court cited *Burrow-Giles Lithographic Co. v. Sarony* (1884), which found that the Copyright Clause permitted photographs to be subject to copyright "so long as they are representative of original intellectual conceptions of the author"–to detail that authors were referred to as human, and a class of persons, not anything else.[87] These photographs could be copyrighted only because of the artistic statement displayed in the imagery.[88] The author of the photographs, therefore, must be a human using the aid of a camera. However, in *Thaler*, the Copyright Office stated that copyright law was limited to "original works of authorship," and since Thaler did not make the work, the claim could not be registered.[89] Thaler appealed the decision, claiming that the "Human Authorship Requirement" was unconstitutional.[90] However, on March 18, 2025, the district court affirmed the Copyright Office's denial of registration.[91]

---

[85] Thaler v. Perlmutter, 130 F.4th 1039, 1045 (D.C. Cir. 2025).
[86] *Id.*
[87] Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884).
[88] *Id.*
[89] *Thaler*, 130 F.4th 1039.
[90] *Id.* at 1043.
[91] *Id.*

Thaler stands alongside Part 3 of the Copyright and Artificial Intelligence series, released by the Copyright Office, which discusses generative AI training.[92] In this document, fair use is discussed as having the potential to transfer into the training of LLMs. However, this depends on the usage, sourcing, and functionality or expressivity of the works used to train LLMs.[93] The amount, publicity, and purpose of use also play a role in what is considered fair use.[94] Prima facie infringement (initial information introduced in a copyright infringement case) of generative AI cases is also discussed in Part 3, detailing the functions that could be considered copyright infringement.[95] This includes data collection/curation affecting the right of reproduction, training data creating replications of datasets to use for teaching LLMs, model weights memorizing protectable expression and infringing on derivative work rights, and retrieval-augmented generation (RAG) works involving the reproduction of copyright works.[96] This is done either through copying works into a retrieval database for the LLM or the LLM retrieving material from an external source.[97]

There have been other cases like *Burrow-Giles Lithographic Company* that necessitate a copyright. *Urantia Foundation v. Kristen Maaherra* (1997) focused on whether the Urantia Foundation held a valid copyright for their book "The Urantia Book." The issue arose as the book was believed to have been authored by celestial beings and transcribed by a group led by Dr. William S. Sadler. On February 10, 1995, the district court ruled that a book containing words "authored by non-human spiritual beings" can only qualify for copyright protection if human selection/rearrangement is involved with the text.[98] This was overruled by the Ninth Circuit Court of Appeals on June 10, 1997, as the Foundation was the proprietor of a composite work.[99] The Foundation was allowed to maintain its copyright, finding Maaherra liable for copyright infringement.[100] However, these cases are not binding on a national level, leaving the status of mixed musical works and their copyrightability the

[92] U.S. Copyright Office, *Copyright and Artificial Intelligence, Part 3: Generative AI Training* (Pre-Publication Version 2025), https://www.copyright.gov/ai/Copyright-and-Artificial-Intelligence-Part-3-Generative-AI-Training.pdf.
[93] *Id.*
[94] *Id.*
[95] *Id.*
[96] *Id.*
[97] *Id.*
[98] Urantia Found. v. Maaherra, 895 F. Supp. 1328 (D. Ariz. 1995).
[99] Urantia Found. v. Maaherra, 114 F.3d 955 (9th Cir. 1997).
[100] *Id*.

same: a case-by-case assessment between districts or states of whether a work is considered copyright infringement.

The courts have made clear that human authorship is necessary for the creation of a work to qualify for a copyright. However, the line between what is a tool and what is a creator is unclear. Cases like *Thaler* indicate that generative AI cannot be considered a viable author of a copyrightable work.[101] Although the Copyright Office, in their Copyright and Artificial Intelligence series, suggests that fair use has the potential to transfer over into the training of LLMs.[102] The outcome depends on the usage of generative AI, which cannot be properly assessed under the modern legal framework. While recent legal rulings have cemented human authorship as a requirement, federal law falters in addressing mixed musical works because they lack a standardized threshold to distinguish between AI as a tool and AI as a creator.

II. THE SHORTCOMINGS OF PREVIOUSLY PROPOSED SOLUTIONS

When looking at the foundations of copyright law, music-specific provisions, and the failure to uniformly address generative AI, mixed musical works' copyright ambiguities become obvious. In response to these issues, two pre-existing copyright procedures have been proposed as solutions. The first is the musical process known as sampling, and the second is the copyright infringement defense of fair use. However, retrofitting these proposed solutions fails to address the underlying issue of the copyrightability of mixed musical works.

A. Sampling

Sampling is a musical practice that has existed for decades. As defined by the Copyright Office, sampling involves taking an existing sound recording and incorporating it into a new work.[103] Sound recordings are not exclusively music tracks, as evidenced by the Billie Eilish track "Bad Guy," which samples the audio from a pedestrian crosswalk signal.[104] Sound recordings may use an unlimited amount of

[101] *See Thaler*, 130 F.4th 1039.
[102] U.S. Copyright Office, *supra* note 92.
[103] U.S. Copyright Office, *Sampling, Interpolations, Beat Stores and More: An Introduction for Musicians Using Preexisting Music*, (Dec. 2021), https://www.copyright.gov/music-modernization/educational-materials/Sampling-Interpolations-Beat-Stores-and-More-An-Introduction-for-Musicians-Using-Preexisting.pdf.
[104] *Id.*

samples,[105] but many types of samples infringe on a copyright owner's exclusive rights. Unless the use is authorized via license (commercial or otherwise) or qualifies for a legal exception, both the recordings and the underlying musical works' samples would be implicated in a copyright infringement case.[106]

The sampling process encounters many copyright issues. Producers who sampled early on in the technique's history did not credit their original works, with one of the most prominent examples being Sugarhill Gang's 1979 track "Rapper's Delight".[107] This practice remained for years, and there are many high-profile cases involving unauthorized sampling.[108] In *Williams v. Gaye* (2018), the Ninth Circuit found that the hit single "Blurred Lines" infringed upon copyrighted elements of Marvin Gaye's 1977 song "Got to Give It Up."[109] The Court ordered songwriters Pharrell Williams and Robin Thicke to pay Gaye's estate $7.3 million in damages.[110]

Regardless, some view the sampling framework as a possible avenue to address the copyright issues of AI music and mixed musical works. Jason Loring and Madison Gaines note that current AI music licensing challenges seem to parallel the evolution of music sampling in hip-hop and rap.[111] Both situations concern the common usage of existing recordings to make new music and the licensing necessary to avoid copyright infringement.[112] Instead of retrofitting sampling statutes into AI music, they suggest using the licensing framework established for sampling AI musical works.[113] However, there are fundamental differences between AI and human sampling, creating problems that the framework cannot address.[114]

The first of these issues is the mechanical difference between how generative AI and humans process and use music to create new pieces. When a human samples a sound recording, there is a creative vision behind the mixing and the number of samples used.

---

[105] U.S. Copyright Office, *supra* note 103.
[106] *Id.*
[107] Eric Reese, *"Rapper's Delight"-- Sugarhill Gang (1979),* Library of Congress (2011), www.loc.gov/static/programs/national-recording-preservation-board/documents/RappersDelight.pdf.
[108] Amelia Diaz, *The Art of Sampling and Copyright Infringement: How Do We Strike a Balance Between the Two?*, N.Y.U. J. Intell. Prop. & Ent. L. (Nov. 7, 2022), https://jipel.law.nyu.edu/the-art-of-sampling-and-copyright-infringement-how-do-we-strike-a-balance-between-the-two/.
[109] Williams v. Gaye, 895 F.3d 1106 (9th Cir. 2018).
[110] *Id.* at 1118.
[111] Jason M. Loring, *AI Music Presents Novel Issues Within Current Frameworks*, Nat'l L. Rev. (July 21, 2025), https://natlawreview.com/article/ai-music-presents-novel-issues-within-current-frameworks.
[112] *Id.*
[113] *Id.*
[114] *Id.*

Attribution is not an issue in these cases, and royalties can be properly paid. This is not feasible for AI-generated instrumentals. Music-based LLMs are created using machine learning algorithms,[115] which have evolved far beyond the Kansei Music System of solely transcribing performances into musical notation. Companies train generative AI models on large corpora of raw audio. This approach allows an AI model, such as OpenAI's Jukebox, to account for nuances in recorded music (such as dynamics) that cannot be discovered in symbolic training materials.[116] Once this model is trained on raw audio (in the case of Jukebox, 1.2 million songs taken from the web),[117] it generates music closely resembling the unique qualities of whatever artist(s), genre(s), and subgenre(s) the user has requested.[118]

This innovation utilizes neural networks known as variational autoencoders (or VAEs), an application of machine learning that compresses sequences of raw audio in lower-dimensional spaces. VAEs efficiently process audio without sacrificing structural perceptibility.[119] This technology analyzes audio at multiple compression levels, allowing the LLM to develop a holistic "understanding" of what is occurring in a musical piece.[120] Once the model learns about the distribution of musical elements from the compressions of the VAEs, the system approximates how a new song would distribute musical elements in these compressed spaces.[121] New songs are then generated based on the user's inputs.[122]

There is an undeniable issue with using the sampling framework as a solution for the copyright issues of mixed musical works. While there are creative inputs from mixed musical works, this solution would consider a variety of AI-to-human content ratios to be of the same caliber. What qualifies as sufficiently original and human enough for copyright protection remains undefined. Additionally, the millions of songs pulled from across the internet for these AI models' datasets make proper

[115] Tim M. Jones, *A Beginner's Guide to Artificial Intelligence, Machine Learning, and Cognitive Computing*, IBM: Developer (May 20, 2021), https://developer.ibm.com/articles/cc-beginner-guide-machine-learning-ai-cognitive/#machine-learning.
[116] Prafulla Dhariwal, Heewoo Jun & Christine M. Payne, *Jukebox*, OpenAI (Apr. 30, 2020), https://openai.com/blog/jukebox/.
[117] *Id.*
[118] *Id.*
[119] Dave Bergmann & Cole Stryker, *What Is a Variational Autoencoder?*, IBM (Nov. 17, 2025), https://www.ibm.com/think/topics/variational-autoencoder.
[120] *Id.*
[121] Chris Nicholson, *A Beginner's Guide to Generative AI - Generative Adversarial Network Definition*, Pathmind, https://wiki.pathmind.com/generative-adversarial-network-gan (last visited Jan. 4, 2026).
[122] *Id.*

attribution impossible. Asking for permission to use all these songs is impractical, unfeasible, and improbable.

Additionally, there are inconsistencies across district courts concerning what forms of sampling are considered copyright infringement, particularly with the application of the de minimis principle. The courts defined de minimis copying as copying that "has occurred to such a trivial extent as to fall below the quantitative threshold of substantial similarity."[123] An artist engaging in de minimis copying takes so little of a copyrighted work that his own work is not substantially similar to the copied work, representing non-infringement.[124] However, districts have alternate definitions of this principle, as seen by the ruling in *Bell v. Willmott Storage Services LLC* (2021). This case defined de minimis copying "so meager and fragmentary that the average audience member would not recognize the appropriation," resulting in a lack of substantial similarity between the works at issue.[125] Inconsistencies in defining and applying the de minimis principle lead to vastly different rulings across circuit courts.

The Sixth District Court case *Bridgeport Music v. Dimension Films* (2005) concerns a lawsuit brought by Bridgeport Music against Dimension Films for their unauthorized use of the song "100 Miles and Runnin'" in the soundtrack of their film "I Got the Hook-Up."[126] The original song, created by the group N.W.A, contained an unlicensed sample from the 1975 Funkadelic track "Get Off Your Ass and Jam," whose copyrights for both the musical composition and sound recording were owned by Bridgeport Music Incorporated.[127] The unlicensed sample was a two-second clip of a three-note guitar chord from the recording of the Funkadelic song, which was then pitch-shifted and looped to last seven seconds within "100 Miles and Runnin."[128] Originally, lower courts sided with Dimension Films, finding the sample was insignificant and did not constitute infringement. However, the Sixth Circuit Appellate Court reversed this opinion, establishing a bright-line rule that any unauthorized copying of a sound recording constituted infringement, regardless of length or significance.[129]

The case of *VMG Salsoul v. Ciccone* (2016) countered the aforementioned ruling. VMG filed a copyright infringement lawsuit against Madonna and others, alleging that

---

[123] Ringgold v. Black Entm't Television, Inc., 126 F.3d 70 (2d Cir. 1997).
[124] *Id.*
[125] Bell v. Wilmott Storage Servs., LLC, 12 F.4th 1065 (9th Cir. 2021).
[126] Bridgeport Music, Inc. v. Dimension Films, 383 F.3d 390 (6th Cir. 2004).
[127] Bridgeport Music, Inc. v. Dimension Films, 410 F.3d 792, 795 (amended opinion on rehearing).
[128] *Id.* at 796-7.
[129] Bridgeport Music, Inc. v. Dimension Films, 383 F.3d 390 (6th Cir. 2004).

the producer of the song "Vogue" copied a 0.23-second segment of horns from the 1983 song "Love Break."[130] Allegedly, the song was modified and used in the production and recording of "Vogue."[131] The District Court granted summary judgment to the defendants and awarded them attorneys' fees.[132] VMG appealed the ruling, but the Appellate Court of the Ninth Circuit agreed that de minimis copying was not copyright infringement.[133] The Court rejected VMG's argument that Congress eliminated the de minimis exception to claims alleging infringement of a sound recording, stating that it should apply "just as it applies to all other copyright infringement actions."[134]

There have been efforts to fix the issues with the sampling framework solution. In 2025, Warner Music Group settled a lawsuit against the AI firm Udio for using its songs to train their music-generating LLM.[135] The two companies plan to launch a joint subscription service in 2026 that would use licensed music from Warner's catalog to power AI-generated remixes, covers, and new songs featuring participating artists' voices.[136] Similarly, in early 2026, Universal, Warner, and Sony Music Group reached a settlement with AI firm Suno to move towards a partnership with licensed AI-generated music.[137] Evidently, corporations that own copyrighted music are partnering with AI companies. However, not only does this monopolize the solution, but it also fails to address the threshold of the copyrightability of a mixed musical work. This will lead to future legal issues as generative AI and mixed musical works become more complex.

Although this sampling solution appears promising at first, issues with the framework prove that it cannot solve the copyrightability of mixed musical works. This framework prompts more open-ended questions regarding the de minimis principle discrepancies.

---

[130] VMG Salsoul, LLC v. Ciccone, 824 F.3d 871 (9th Cir. 2016).
[131] *Id.*
[132] 17 U.S.C. § 505 (1976).
[133] *See VMG Salsoul*, 824 F.3d 871 at 3.
[134] *See id.* at 5.
[135] *AI Music Gets Hot as Warner Music Settles with Udio, Suno Hits $2.45B Valuation*, Cryptopolitan, Nov. 19, 2025, https://advance.lexis.com/api/document?collection=news&id=urn%3acontentItem%3a6H7P-D053-S6RW-B0GJ-00000-00&context=1519360&identityprofileid=GRCCJV51394.
[136] *Id.*
[137] *AI-Driven Music Gains Ground as Warner, Universal and Sony Align with Suno*, News Bites-Private Companies, Jan. 10, 2026, https://advance.lexis.com/api/document?collection=news&id=urn%3acontentItem%3a6HMM-9C63-RRPR-Y0MS-00000-00&context=1519360&identityprofileid=GRCCJV51394.

B. Fair Use

Another solution implemented in legal disputes to solve the copyright issues of mixed musical works is fair use. This doctrine defends against the usage of copyright material within the creation of other works. However, much like the inconsistency issues with sampling and the de minimis principle, applying fair use towards works created by generative AI is notoriously difficult, as seen in *Bartz v. Anthropic* (2025) and *Kadrey v. Meta Platforms* (2025).

Bartz was a case brought against the AI Firm Anthropic PBC, which allegedly pirated the works of a union of authors to train their Claude series of LLMs.[138] The authors claimed that Anthropic knowingly pirated their works without providing any compensation.[139] Additionally, plaintiffs argued that Claude's ability to generate writings of its own quickly diluted the literature market, causing further damages.[140] Before the case settled, a ruling was made to change from fair use to a piracy argument.[141] On June 23, 2025, Senior U.S. District Judge William Alsup ruled that Anthropic's usage of copyrighted literary material to train its Claude series of LLMs was considered "exceedingly transformative and . . . a fair use under Section 107 of the Copyright Act."[142] Additionally, Anthropic's digitization of the copyrighted literature for the purpose of creating an accessible digital library for Claude's training was also considered fair use, as all Anthropic did not "add[] new copies, creat[e] new works, or redistribut[e] existing copies."[143] The only process that was not considered fair use was the usage of pirated material to train Anthropic's LLMs.[144]

One week later, the Ninth Circuit ruled on *Kadrey v. Meta Platforms* (2025), involving Meta's alleged copyright infringement in using the Library Genesis (LibGen) dataset, which is filled with thousands of pirated copyrighted works.[145] Authors, including Richard Kadrey, sued Meta for using the LibGen dataset to train their LLM, claiming that Meta violated the Digital Millennium Copyright Act.[146] Section 1202(B)

---

[138] Bartz v. Anthropic PBC, No. 3:24-cv-05417 (N.D. Cal. 2024).
[139] *Id.*
[140] *Id.*
[141] *Id.*
[142] *Id.*
[143] *Id.*
[144] *Id.*
[145] Kadrey v. Meta Platforms, Inc., No. 3:23-cv-03417 (N.D. Cal. 2023).
[146] *Id.*

of the DMCA regards Copyright Management Information (CMI), and states that no person (without consent from the copyright holder) should intentionally remove or alter any CMI regarding a work, distribute or import works knowing that the CMI had been altered or removed, or distribute, import for distribution, or publicly perform these works.[147] Kadrey claimed that the DMCA was violated because the CMI had been stripped by Meta using their copyrighted materials as training data for their LLM.[148] District Judge Vince Chhabria dismissed this case, granting Meta summary judgment.[149] This decision dictated how fair use may be perceived regarding AI. While Judge Chhabria affirmed that the training of generative AI is a "highly transformative" process,[150] he also stated that in most cases, Meta's conduct would be considered illegal.[151] Additionally, Judge Chhabria discussed the harms of market dilution: "indirect" substitution (introducing an immense amount of competitive products/work, "flooding" the original work's market), rather than "direct" substitution.[152] In defense of their usage of copyrighted materials to train their LLM, Meta cited *Authors Guild, Inc. v. Google Inc.* (2015) as a parallel case.

Authors Guild was a case brought against Google for digitizing millions of books to use them for their Google Books project.[153] Authors Guild and other plaintiffs sued Google for copyright infringement.[154] The Second District Court found Google's use of the texts to be fair use, both in creating the Google Books database and providing digital copies of the books they borrowed.[155]

Kadrey was different from *Author's Guild* as it "involves a technology that can generate literally millions of secondary works, with a minuscule fraction of the time and creativity used to create the original works it was trained on."[156] Judge Chhabria stated that the concept of market dilution was highly relevant in cases involving LLM training, as Meta's LLM had the potential to flood the market with similarly compelling works. Judge Chhabria further acknowledged, "it seems likely that market dilution will often cause plaintiffs to decisively win the fourth factor [market

[147] 17 U.S.C. § 1202 (1998).
[148] *Kadrey*, No. 3:23-cv-03417 (N.D. Cal. 2023).
[149] *Id.*
[150] *Id.*
[151] *Id.*
[152] *Id.*
[153] Authors Guild v. Google, Inc., 804 F.3d 202 (2d Cir. 2015).
[154] *Id.*
[155] *Id.*
[156] *Kadrey*, No. 3:23-cv-03417 (N.D. Cal. 2023).

harm]—and thus win the fair use question overall."[157] However, plaintiffs did not succeed because they were unable to "present[] enough evidence to raise a genuine dispute of material fact sufficient to give the question of market dilution to a jury."[158] This ruling contradicts *Bartz*, finding that training generative AI on copyrighted material should be considered copyright infringement.

Kadrey disregards the precedent set by the Supreme Court case *Campbell v. Acuff-Rose* (1994), which also concerns fair use. Acuff Rose Music Incorporated claimed copyright infringement against the parody song "Pretty Woman" made by the rap group 2 Live Crew.[159] The music company claimed that the parody infringed on Roy Orbison's rock ballad "Oh Pretty Woman" (whose rights were given to the music group) by copying too much from the original song and using it commercially.[160] Campbell defended his work, arguing the song qualifies for fair use despite its commercial nature.[161] While the District Court initially ruled in favor of 2 Live Crew and granted summary judgment under the Copyright Act of 1976, the Appeals Court found that 2 Live Crew's song did not qualify as fair use.[162] Taking the "heart" of the original song and making it the "heart" of the parody, 2 Live Crew created market harm given the commercial nature of the parody song.[163] 2 Live Crew used too much of the original work, as stipulated under the third clause of fair use (which considers the amount and substantiality of the portion of the original work used).[164] The issue under review was whether or not the parody was defensible under fair use. The Supreme Court found that commerciality did not automatically render the appropriation of the plaintiff's material unfair, clarifying that the transformative nature of a work is a critical factor in determining fair use.[165] The Court decided on two main issues: (1) whether the lower court erred in ruling that the commercial nature of the defendant's parody rendered the use presumptively unfair; and (2) whether the commercial purpose of a work was the decisive element of the inquiry into the purpose and character of the work.[166] The Court held that the Sixth Circuit erred in giving

[157] *Kadrey*, No. 3:23-cv-03417 (N.D. Cal. 2023).
[158] *Id.*
[159] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569 (1994).
[160] *Id.*
[161] *Id.*
[162] *Id.*
[163] *Id.*
[164] *Id.*
[165] *Id.*
[166] *Id.*

decisive weight to the commercial nature of the parody song, alongside the evidentiary presumption that the commercial nature of the song rendered it unfair.[167] The opinion states parody "has to work its way through the relevant factors, and be judged case by case, in light of the ends of the copyright law;" the commercial or nonprofit educational purpose of a work is only one element of its purpose and character.[168] The Court further ruled that the commercial purpose of a work is not the decisive element of the inquiry into the purpose and character of a work.[169] All four elements of fair use must be evaluated to determine if a work qualifies or not.[170] This case influenced subsequent fair use cases and demonstrated that rulings regarding AI vary depending on the judge.

While the fair use doctrine is normally flexible, case law must be consistent to maintain order in federal court rulings. In relation to generative AI, fair use is ever-changing and often contradicts precedent. Relying on the fair use defence for mixed musical works would stagnate generative AI copyright law and leave copyrightability to be evaluated case-by-case.

III. THE PROPOSED ITEMIZATION SYSTEM

When considering fundamental copyright law, modern case law, acting policy, and proposed solutions, it is clear that there is yet to be an adequate answer to the copyrightability of mixed musical works. This section proposes that Congress enact a uniform solution incorporating elements of de minimis fair use and the sampling framework by further itemizing musical works.

A. Further Itemizing Musical Works

Music has two distinct forms of copyright protection: musical works and sound recordings. Copyrightable musical work authorship is divided into the four main elements of melody, rhythm, harmony, and song lyrics.[171] However, music industry standards credit a multitude of contributions to other parts of a song, including production, engineering, songwriters, background vocalists, composers, and

[167] *Campbell*, 510 U.S. 569.
[168] *Id.* at 570.
[169] *Id.* at 570.
[170] *Id.* at 578.
[171] U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* 802.8(A) (3d ed. 2021).

performers.[172] Itemization should be implemented in law as a natural evolution of pre-existing copyright practices established by the Copyright Office.

U.S. copyright law has different subsets of copyright protection within a singular work. The complexity of generative AI outputs creates a new dilemma for copyright protection. A greater separation of song components will allow the Copyright Office to limit the use of AI in a mixed musical work.

This itemization solution separates a musical work into ten distinct components potentially affected by generative AI:

1. Song Lyrics: Lyrics (a set of words sometimes grouped into verses and/or choruses) intended to be accompanied by the music of a musical work.
2. Performance: The performance of written lyrics for a musical work.
3. Vocal Effects: Alterations to the sound of a vocal track within a musical work.
4. Mixing: The combination and adjustment of the individual audio tracks within a musical work into one cohesive piece.
5. Mastering: The polishing of the mixed audio to optimize a musical work for distribution across various formats and playback systems.
6. Rhythm: The linear succession of durational sounds and silences of a musical work.
7. Melody: The linear succession of pitches within a musical work.
8. Harmony: The vertical and horizontal combination of pitches in a musical work that results in chords and chord progressions.
9. Instrumentation: The sounds/instruments used to create a musical work.
10. Miscellaneous Audio Effects: Filters that alter the sounds of a track within a musical work (other than the vocal track).

Each mixed musical work would only be allowed to use generative AI in one of these ten components. Human creativity would remain paramount alongside the progression of technology, keeping in line with the "Progress" Clause of the Constitution. Additionally, this itemization policy implements the de minimis principle. As previously explained, the de minimis principle entails that the law does

[172] Jessica Adiele, *Spotify Launches SongDNA and Expanded Credits*, Innovation Village (Nov. 19, 2025), https://innovation-village.com/spotify-launches-songdna-and-expanded-credits/.

not take notice of very small or trifling matters. This proposal incorporates de minimis into federal legislation by minimizing AI in mixed musical works. Allowing AI to be used in only one category ensures the content is transformative and minimal enough to be considered fair use. Furthermore, the de minimis principle would be incorporated into training LLMs. Considering the massive size of LLM training banks and how little each audio track would contribute to creating one of these elements, the de minimis principle applies to LLM training. This minimal usage of copyrighted works allowed the de minimis principle to apply in *VMG Salsoul*.[173] Thus, this new application of the de minimis principle to LLM training could be considered a natural evolution and application of prior legal precedent. Furthermore, this solution ensures that the de minimis principle is codified in federal law. The legislation would directly define the de minimis principle in LLM training and outputs, at least with respect to AI copyright.

Issues remain from leaving this policy in a barebones state, the most pressing being voice imitation via generative AI within mixed musical works. If vocal effects are used to make a voice sound like another artist, then anyone could make songs imitating voices while avoiding copyright infringement.[174] Additionally, while the Copyright Office would know the AI elements of a musical work upon registration, the public would not, creating a transparency problem. Incorporating state laws into federal policy and adding qualifiers to the usage of generative AI in certain elements of musical works would solve this issue.

B. Federal Codification of AI Copyright Laws via Usage Requirements

Elements of musical works outlined in the itemization solution require additional qualifications and modifications to protect the exclusive rights of copyright holders. In particular, provisions toward vocal effects, performance, song lyrics, and instrumentation would ensure the ethical use of generative AI within mixed musical works. This would prioritize human creativity in copyrightable works.

Starting with vocal effects and performance, legislation should restrict what one could do with effects or AI vocals. The use of AI to imitate another individual's voice should be considered copyright infringement. This prevents generative AI from

[173] *See VMG Salsoul*, 824 F.3d at 19.

[174] Rachel Reed, *AI Created a Song Mimicking the Work of Drake and The Weeknd. What Does That Mean for Copyright Law?*, Harv. L. Today (May 2, 2023), https://hls.harvard.edu/today/ai-created-a-song-mimicking-the-work-of-drake-and-the-weeknd-what-does-that-mean-for-copyright-law/.

infringing on the rights of others to their own voices.

Song lyrics would be limited by a set percentage of words generated by LLMs. Specifically, generative AI models should be allowed to produce no more than one-fourth of the total word count. This quantity aligns with the original separation of song copyright as detailed in Section 802.3 of the Compendium of the U.S. Copyright Office Practices.[175] To keep this legislation in line with the intent of previous copyright law, this proposed policy would restrict AI song lyrics to a fourth of the song. This restriction ensures that generative AI does not replace human writing in the music industry. Many artists started as songwriters; most famously, Frank Ocean originally was a ghostwriter for Justin Bieber, Beyoncé, and Alicia Keys.[176] Restricting the percentage of AI-generated lyrics protects human creativity and ensures that entryways into the music industry, such as ghostwriting, remain viable.

Finally, for instrumentation, there must be a change in the original arrangement of AI-generated outputs. If LLMs generate the instrumentation for a mixed musical work, it must be distinctly altered from the original AI audio output. This can be done by pitch shifting the track or splitting the sound recording into segments ("chopping" the sample) and rearranging the clips. This caveat mirrors the previously discussed practices of sampling. An original track is altered to make an entirely new mixed musical work. This philosophy requires significant human intervention via sampling or some other alteration of an original audio file, protecting human creativity in copyrightable works. Sufficient transformation (akin to how courts determine fair use) from the original audio file would determine if significant human intervention occurred.

Implementing these restrictions would incorporate the human authorship requirement outlined in *Thaler*, with human involvement remaining the standard to qualify a work for copyright protection. This solution upends the copyright "No Man's Land" for both ownership and distribution of mixed musical works, prioritizing human creation in music.

C. Implementation of AI Markers/Verification on Mixed Musical Works

Verifiability remains an issue with the itemization solution. Modern solutions are inaccurate, as evidenced by the Federal Trade Commission's proposed consent order

[175] U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* 802.8(A) (3d ed. 2021).

[176] Joel M. Harris, *Top Ten Most Famous Ghostwriters (Who Kept It a Secret)*, Ghostwriters & Co. (Feb. 3, 2022), https://ghostwritersandco.com/top-ten-most-famous-ghostwriters/.

against Workado LLC for the inaccuracy of their own AI Detector Content at Scale AI.[177] Workado marketed its software as over 98 percent accurate in classifying whether text was generated by humans or by AI tools such as ChatGPT, Claude, and GPT-4.[178] However, independent testing revealed the tool correctly classified AI-generated non-academic text only 53% of the time, far below the claimed performance.[179] Additionally, almost all AI Detection software focuses on academic/literary works.[180] This proposal incorporates a simple yet verifiable solution to ensure the U.S. Copyright Office properly recognizes AI works: file signatures.

File signatures are numerical entries in source codes used to identify or verify a file's content and format.[181] While normally considered an anti-pattern that breaks one of the oldest rules of programming, these numbers can create an unalterable piece of text that marks who, what, and where a file originates.[182] These numerators are present in all files and are necessary for computer operating systems. If the file is altered and the data recomputed, there is a high probability that the new data is different from its previous value, and thus, the files are flagged.[183] Implementing this system would ensure that those who attempt to disguise their AI use are caught, and the content within the tampered files is destroyed.

The Copyright Office should implement private file signatures and mandate AI firms such as Suno and Udio to use the signatures when creating AI outputs. For a company to make an LLM intended to generate musical outputs, the Copyright Office would apply this signature to all AI-generated works. Additionally, artists who want to copyright their work would have to individually classify all ten components of their song under the itemization system if they use generative AI. The Registrar would then verify how much of the mixed musical work was composed using generative AI content and whether it qualified for copyright protection. Departments would be created within the Copyright Office, of at least fifteen people, for each of the ten items

---

[177] *FTC Proposes Consent Order Against Workado LLC Over Misleading AI Detector Accuracy Claims*, Targeted News Serv., May. 3, 2025, https://advance.lexis.com/api/document?collection=news&id=urn%3acontentItem%3a6FPX-CD83-RT2S-V27R-00000-00&context=1519360&identityprofileid=GRCCJV51394.

[178] *Id.*

[179] *Id.*

[180] Annette Demers, *AI Detection Software as a Tool Against Plagiarism?*, Slaw (June 13, 2024), https://www.slaw.ca/2024/06/13/ai-detection-software-as-a-tool-against-plagiarism/.

[181] Robert C. Martin, *Clean Code: A Handbook of Agile Software Craftsmanship* 300 (2016).

[182] *Id.*

[183] Darrel Ince, *A Dictionary of the Internet* 120 (1st ed. 2001).

of a musical work. This ensures the AI verification process is comprehensive and does not impede the office's existing responsibilities.

This verification process will take time. The U.S. Copyright Office takes 2.5 months, on average, to process any claim.[184] e-Service Claims take 3.6 months, on average.[185] The length of registration would vary for artists relying on their music as their sole source of revenue. A grace period must be instituted to allow artists to distribute their tracks without fear of copyright infringement suits as the office processes their registration. This grace period requires that the artist send their track to the Copyright Office for review. All mixed musical works seeking publication on streaming platforms would undergo this verification process.

This system of file signatures is inspired by the California AI Transparency Act and the provision markers required for AI content and recording devices.[186] Similar to implementing indicators, file signatures create an unalterable way to verify the human nature of mixed musical work, thereby allowing the itemization solution to operate as intended.

In the case that more than one component of a musical work is flagged as an AI output, the song would not be considered copyrightable. Additionally, if certain elements are too similar to existing tracks and artists (such as vocal effects), these tracks would be flagged and removed from streaming platforms and commercial distribution. The Copyright Office would send an offending track to all major streaming platforms, such as YouTube, Spotify, SoundCloud, Tidal, etc. Upon sending these tracks, the Copyright Office would mandate that platforms check if an uploaded song is a copyright-infringing mixed musical work, preventing re-uploads. YouTube already employs a similar process with their Copyright Match Tool, which automatically recognizes if a copyrighted track is present within an upload.[187] Platforms can easily implement this solution, preventing infringing works from profiting.

Applicants must provide their LLM chat logs to verify which lyrics were AI-generated, to ensure the percentage is below one-fourth. These chat logs can be verified by asking AI firms for the same chat logs for comparison. Companies such as OpenAI keep LLM chat logs for at least 30 days, even after they are deleted on the

[184] U.S. Copyright Office, *Registration Processing Times*, https://www.copyright.gov/registration/docs/processing-times-faqs.pdf (last visited Apr. 18, 2026).
[185] *Id.*
[186] *See* California AI Transparency Act, S.B. 942 at 12.
[187] Google, *Use the Copyright Match Tool*, https://support.google.com/youtube/answer /7648743?hl=en (last visited Apr. 18, 2026).

user's end.[188] For mixed works that do not use AI to generate song lyrics, registrants must provide written documentation verifying their authenticity.

There are weaknesses to using written documentation to prove authenticity. Applicants may doctor their documents, creating an ironic authenticity issue for verifying authenticity. Thus, I propose a third and final solution: the creation of private AI detection software used exclusively by the Copyright Office.

The main problem regarding AI detection software is that it is primarily trained on academic works. As such, most AI detection software is inaccurate when determining whether or not a work is AI. However, if AI detection software is trained exclusively on human-written song lyrics, then it would likely be more accurate. Privatizing this software would prevent AI companies from updating their models to avoid detection. As seen in Claude 4's "context scheming" (where AI would alter and change their outputs based on the situation and desires of a user), generative AI models are becoming better trained to avoid detection by other models.[189] To keep the integrity of this AI detection software, it must remain private.

In cases of false positives or negatives, the Copyright Office has always allowed prospective copyright holders to appeal a rejection. The traditional appeals process will remain as part of this solution, with a limit of two appeals for a rejected work. Additionally, the second appeal must provide further proof of a non-offense in a particular category that may have been misattributed as AI/copyright infringement.

However, two major questions remain regarding AI firms and companies that have recently cut deals. One, why would AI firms cooperate with the U.S. Copyright Office in the first place? Second, would there be pushback from large corporations such as Universal Music Group, which had recently made deals with these AI firms? As for the first question, the main incentive for these companies to collaborate with the Copyright Office is avoiding culpability for future lawsuits regarding copyright infringement. AI firms such as Anthropic have consistently been embroiled in copyright lawsuits due to the outputs of their LLMs.[190] In an effort to alleviate some pressure, AI firms would be inclined to assist the Copyright Office in enforcing this lenient solution. This co-operation would also limit legal expenses. Additionally, repeat offenders would incur a 15% increase in court fines per consecutive case. In answering

[188] Brad Lightcap, *How We're Responding to the New York Times' Data Demands in Order to Protect User Privacy*, OpenAI (June 5, 2025), https://openai.com/index/response-to-nyt-data-demands/.
[189] Ava Green, *Report: Advanced AI Models Lie and Deceive to Evade Detection and Oversight*, Newstarget (July 30, 2025), https://www.newstarget.com/2025-07-30-advanced-ai-models-lie-deceive-evade-detection.html.
[190] *See Bartz*, No. 3:24-cv-05417 at 20.

the second question, one needs to understand what the licensing music companies have agreed to. Licensing music catalogs is merely an agreement between firms. Even if generative AI outputs are considered copyright infringement, the copyright owners would not sue offenders because of these licenses. Thus, while there would be some mild pushback, it would not be significant enough to dissuade AI firms from reaching licensing deals.

Even with these developments, verification issues remain. The computational demands of LLMs pose significant challenges for the quick deployment of this copyright protection solution, highlighting the need for optimization strategies.[191] Additionally, the privacy required of verification used by the Copyright Office raises concerns of transparency. However, this remains the most beneficial solution for artists, copyright holders, and AI music models. Crucially, this solution rectifies the existing ambiguity for mixed musical works seeking copyright protections while prioritizing human creativity. This solution also provides the foundation for legislation to adapt to future generative AI technology.

CONCLUSION

This paper has analyzed copyrightability problems facing mixed musical works. Part I discussed the basis of modern copyright law: the Copyright Act of 1976. This paper highlighted copyright legislation focused on music and generative AI, illuminating the holes in modern copyright law. Part II discussed previously proposed solutions to issues of mixed musical works, namely the sampling framework and the fair use defense. However, whether it be inconsistencies between districts on the de minimis principle or inconsistencies between district court cases in applying fair use, these methods are proven to be unviable solutions for AI copyright infringement. The itemization solution proposed in Part III begins to solve the copyright issues of mixed musical works.

Copyright law is constantly evolving and should prioritize human creativity and innovation. If this legal subsect remained stagnant, modern issues would be forced into an incompatible framework. Federal stagnation requires states to implement variable and fragmented copyright laws. This is the current status of copyright and generative AI laws in the U.S. Whether it be the vague acting policy of the Copyright Office, inconsistent rulings in court cases within the same district on fair use, or inter-circuit

[191] Gregory Gondwe, *Can AI Outsmart Fake News? Detecting Misinformation with AI Models in Real-Time*, 3 Emerging Media 252 (2025).

disagreement on principles of law such as de minimis, it is clear that current law regarding mixed musical works lacks a clear standard and prompts ad hoc decisions.

However, national legislation, such as the itemization solution, can uniformly solve this copyright paradigm. An uncertain issue is clarified in further itemizing musical works, limiting how much and where one can use generative AI. To protect human creativity in a world where more artists are incorporating AI, it is imperative to find a solution that aligns with the interests of copyright, the everyday music listener, and the amateur musician.