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AI-Generated Fashion Designs: Who or What Owns the Goods?

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Cover Page Footnote

J.D. Candidate, Fordham University School of Law, 2020; B.S., Legal Studies, St. John's University, 2016. I would like to thank Professor Susan Scafidi for her guidance, advice, and inspiration throughout the initial writing process, as well as the IPLJ Editorial Board and staff for their editing and feedback, particularly Senior Research & Writing Editor Elliot Fink and former Senior Research & Writing Editor Sean Corrado. I would also like to extend a special thank you to my family and friends for supporting me with iced coffee, giving me inspiration, and sending me all fashion and artificial intelligence-related news articles they found.

AI-Generated Fashion Designs: Who or What Owns the Goods?

Caen A. Dennis*

As artificial intelligence (“AI”) becomes an increasingly prevalent tool in a plethora of industries in today’s society, analyzing the potential legal implications attached to AI-generated works is becoming more popular. One of the industries impacted by AI is fashion. AI tools and devices are currently being used in the fashion industry to create fashion models, fabric designs, and clothing. An AI device’s ability to generate fashion designs raises the question of who will own the copyrights of the fashion designs. Will it be the fashion designer who hires or contracts with the AI device programmer? Will it be the programmer? Or will it be the AI device itself? Designers invest a lot of talent, time, and finances into designing and creating each article of clothing and accessory it releases to the public; yet, under the current copyright standards, designers will not likely be considered the authors of their creations. Ultimately, this Note makes policy proposals for future copyright legislation within the United States, particularly recommending that AI-generated and AI-assisted designs be copyrightable and owned by the designers who purchase the AI device.

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INTRODUCTION

Technology is changing faster than ever and artificial intelligence (“AI”) has already paved its way in the fashion industry.¹ But what is AI? AI is computer technology that acts as a tool to mirror human behavior.² AI acts as a self-learning machine by processing great quantities of information and analyzing that information to create a work.³ As of now, AI is capable of creating fashion designs,⁴ music,⁵ and art⁶ by transforming extensive research into algorithms programmed into a machine.⁷ The problem

¹ Jeffrey Greene & Anne Marie Longobucco, *Is Artificial Intelligence the Newest Trend in Fashion?*, N.Y.L.J. (Aug. 24, 2018, 03:40 PM), <https://www.law.com/newyorklawjournal/2018/08/24/artificial-intelligence-the-newest-trend-in-fashion/> [https://perma.cc/ZS56-9V64].

² *Id.*; see also *infra* Part I.C.

³ Kyra Nezami, *AI and Intellectual Property: Can AI Infringe Copyright?*, IP HARBOUR (Aug. 14, 2017), <https://ipharbour.com/blog/latest/ai-intellectual-property-can-ai-infringe-copyright/> [https://perma.cc/92FX-TM57].

⁴ Fashion students have used a combination of AI programming and soldering equipment to create an AI-assisted backpack. Dominic Cadogan, *What the Future Holds for AI in Fashion Design*, DAZED DIGITAL (Sept. 21, 2018), <http://www.dazeddigital.com/fashion/article/41476/1/what-the-future-holds-for-ai-in-fashion-design> [https://perma.cc/4TB5-USHA]; see also *Solder*, MERRIAM-WEBSTER ONLINE DICTIONARY (Aug. 18, 2019), <https://www.merriam-webster.com/dictionary/solder> [https://perma.cc/66K7-DWSF] (defining “soldering” as the process of using “a metal or metallic alloy used when melted to join metallic surfaces . . .”).

⁵ AI has already been responsible for creating melodies and chords after being inputted with selected data by those in the music industry. See, e.g., *Taryn Southern Is First Artist to Compose Pop Album with AI*, CISION PRWEB (Sept. 27, 2018), https://www.prweb.com/releases/taryn_southern_is_first_artist_to_compose_pop_album_with_ai/prweb15792349.htm [https://perma.cc/KH99-6KBA] (displaying and discussing a sample of the AI-assisted song by singer Taryn Southern).

⁶ See, e.g., Video: Panel, Artificial Intelligence: Intellectual Property Policy Considerations, The Ins and Outs of Copyright and AI, U.S. PAT. & TRADEMARK OFF. (Jan. 31, 2019), available at <https://rev-vbrick.uspto.gov/#/videos/d6e591c3-64cf-4d74-ab35-9f387a2da4b2> [https://perma.cc/HS35-YEUP] [hereinafter The Ins and Outs of Copyright and AI] (describing how AI was used to create “the next Rembrandt” painting).

⁷ See Greene & Longobucco, *supra* note 1; see also Mark A. Fischer, *Are Copyrighted Works Only by and for Humans? The Copyright Planet of the Apes and Robots*, DUANE MORRIS NEW MEDIA & ENT. L., (Aug. 18, 2014) <https://blogs.duanemorris.com/newmedialaw/2014/08/18/are-copyrighted-works-only-by-and-for-humans-the-copyright-planet-of-the-apes-and-robots/> [https://perma.cc/NU68-SCBM]; see also Dhani Mau, *Yoox Used Artificial Intelligence to Design Its First Private-Label Collection*, FASHIONISTA (Nov. 6, 2018), <https://fashionista.com/2018/11/yoox-private-label-collection> [https://perma.cc/BNA5-35CD] (explaining how Yoox used a compilation of information

that many industries will soon face is whether the owners or licensors of the AI device have copyright protection over the goods produced when the work is not solely created by a human.⁸ Particularly, the fashion industry has already anticipated fashion designers experiencing legal obstacles when they request copyright protection for their AI-generated designs.⁹ Because an AI device can be compared to a designer that has been hired by a brand to assist in the design process for a particular fashion collection,¹⁰ AI-assisted and AI-generated products should be copyrightable and belong to the designers or brands that own the AI device.

This Note investigates the legal issues that the fashion industry will face due to the technological advancement of AI and explores possible solutions. Part I examines the history of copyright law, the confusion over the “authorship” requirement in copyright law, and the fashion industry’s battle against copyright infringement, both internationally and in the United States. Part II analyzes the arguments made for and against awarding designers and brands copyright protection for designs that would typically have protection, but may be denied protection due to the role AI has played in the design process. More specifically, Part II.A. discusses the analogy of animal authorship, while Part II.B. discusses the analogy of computer authorship. Part II.C. then discusses the analogy of AI-generated fashion designs compared to AI-generated fashion models and who owns the rights over these models. Part II also further explains AI and the role that it has, and will play, in the fashion industry by unpacking statutes that welcome the interpretation that AI-generated designs are protected. Additionally, Part II utilizes case law illustrating how works created by other inanimate objects have been protected, and scholarly opinions that support this Note’s suggestion that end users (fashion houses or independent designers) are authors. By establishing that end users are authors, Part II reveals that they meet copyright law’s authorship requirement and are thus worthy of copyright protection over AI-generated fashion

regarding fashion markets, upcoming trends, and customer feedback to create a data pool to be input into its AI device).

⁸ Greene & Longobucco, *supra* note 1.

⁹ *Id.*

¹⁰ *See infra* Part II.C.

designs. Finally, Part III uses the analysis from Part II to explain the reasoning behind this Note's conclusion—that AI-generated and AI-assisted designs should be copyrightable and owned by the designers who purchase the AI device.

I. BACKGROUND

A. *History of the Fashion World Versus Copyright Law Battle*

Fashion has battled globally with gaining copyright protection over fashion designs, both on clothing¹¹ and accessories.¹² One country that has a longstanding history of fashion design protection is France.

While France already had the world's strongest legal protection for fashion design,¹³ in 2002, the European Union ("EU") provided protection of its own.¹⁴ This community-wide regulation provided three years of automatic, unregistered protection for all original designs, along with greater protection for registered designs.¹⁵ The EU defines "design" as "the appearance of the whole or a part of a product resulting from the features of . . . the lines, contours,

¹¹ See generally *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 137 S. Ct. 1002 (2017); see also *infra* notes 29–34 and accompanying text.

¹² See *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 993–94 (2d Cir. 1980) (battling the issue of whether the sculptural elements of a belt buckle could be conceptually separable from its utilitarian function and thus subject to copyright).

¹³ Susan Scafidi, *Intellectual Property and Fashion Design*, in 1 INTELL. PROP. & INFO. WEALTH 115, 116–18, 126 (Peter K. Yu ed., 2006) (describing how French silk weavers became the first entity to receive intellectual property rights to their designs, which led to nationwide protection in 1787); see also Article L112-2(14) of France's Intellectual Property Code, which specifically grants copyrights to a myriad of fashion items including "creations of the seasonal industries of dress and articles of fashion. [For example, i]ndustries which, by reason of the demands of fashion, frequently renew the form of their products, particularly the making of dresses, furs, underwear, embroidery, fashion, shoes, gloves, leather goods, the manufacture of fabrics of striking novelty or of special use in high fashion dressmaking, the products of manufacturers of articles of fashion and of footwear and the manufacture of fabrics for upholstery shall be deemed to be seasonal industries." CODE DE LA PROPRIÉTÉ INTELLECTUELLE [INTELLECTUAL PROPERTY CODE] art. L112-2(14) (Fr.). The strength of France's current legal protections over fashion designs likely stems from it being a nation that has a longstanding history of protecting fashion designers from infringement.

¹⁴ See Scafidi, *supra* note 13, at 126.

¹⁵ *Id.*

colours, shape, texture . . . or its ornamentation.”¹⁶ The EU Directive requires that the design be “novel”¹⁷ (i.e., there are no identical pre-existing designs publicly available)¹⁸ and possess “individual character”¹⁹ (i.e., the overall impression is different from other publicly available designs).²⁰ Contrarily, in the United States, there is no explicit statutory law that makes fashion design copyrightable.²¹

Before determining whether an AI-generated fashion design is copyrightable, it is important to understand U.S. copyright law itself.²² Copyright protection is permitted in the United States where there is an original work of authorship that is fixed in a tangible medium and “perceptible either directly or with the aid of a machine or device.”²³ The Copyright Act protects an author’s expression of an idea, though not the idea itself.²⁴ The Copyright Act does not, however, protect useful articles in and of

¹⁶ Directive 98/71/EC of the European Parliament and of the Council of 13 October 1998 on the Legal Protection of Designs, art. 1(a), 1998 O.J. (L 289/28) [hereinafter the EU Directive].

¹⁷ *Id.* art. 3(b).

¹⁸ *Id.* art. 4.

¹⁹ *Id.* art. 3(b).

²⁰ *Id.* art. 5.

²¹ Alexis Kuo, *Copyrightability of Fashion Designs: Legislative Suggestions for Taiwan’s Copyright Law*, N.Y.U. J. INTELL. PROP. & ENT. L. BLOG (Apr. 7, 2017), <https://blog.jipel.law.nyu.edu/2017/04/copyrightability-of-fashion-designs-legislative-suggestions-for-taiwans-copyright-law/> [<https://perma.cc/6XHF-YAJM>].

²² Steve Schlackman, *Who Holds the Copyright in AI Created Art*, ART L.J. (Apr. 22, 2018), <https://alj.artpreneur.com/the-next-rembrandt-who-holds-the-copyright-in-computer-generated-art/> [<https://perma.cc/HV5Y-S37Z>].

²³ *Copyright in General*, U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/help/faq/faq-general.html> [<https://perma.cc/XJ2J-EHF2>]; see also Copyright Act of 1976, 17 U.S.C. § 102(a) (2019). While the U.S. Copyright Act does not define “works of authorship,” “works of authorship” have been stated to include “(1) literary works; (2) musical works, including any accompanying words; (3) dramatic works, including any accompanying music; (4) pantomimes and choreographic works; (5) pictorial, graphical, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.” *Id.*; see also *Conan Props. Int’l LLC v. Sanchez*, No. 17-CV-162 (FB), 2018 U.S. Dist. LEXIS 98631, at *21 (E.D.N.Y. June 8, 2018) (stating that “a work of authorship is ‘original’ where it (1) ‘was independently created by the author’ and (2) ‘possesses at least some minimal degree of creativity.’” (citing *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991))).

²⁴ *Feist Publ’ns*, 499 U.S. at 349–50.

themselves.²⁵ Because clothing is used to cover one’s body, in a sense it is a useful item—whether some articles like clothing should be granted copyright protection is another story.²⁶ Current U.S. copyright law provides some guidance as to which useful articles are worthy of its protection. For example, useful articles can be protected under copyright law “if, and only to the extent that, such design incorporates pictorial, graphical, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”²⁷ Despite members of Congress proposing numerous bills to better protect fashion designs under copyright law, each bill has failed to pass.²⁸

Most recently, the Innovative Design Protection Act (“IDPA”) was an attempt to award fashion designers copyright protection for their creations.²⁹ The IDPA (formerly, the Innovative Design Protection and Piracy Prevention Act,³⁰ and formerly, the Design Piracy Prohibition Act³¹), proposed extending a three-year copyright protection to fashion designs by amending Section 1301 of the Copyright Act to include “an article of apparel” within the definition of a “useful article.”³² The IDPA stated:

(8) A ‘fashion design’—

“(A) is the appearance as a whole of an article of apparel, including its ornamentation; and

“(B) includes original elements of the article of apparel or the original arrangement or placement

²⁵ Brian T. Yeh, Cong. Research Serv., Copyright Protection for Fashion Design: A Legal Analysis of Legislative Proposals in the 111th Congress 1 (2010) (stating the exception to the rule, designs of boat hulls).

²⁶ *Id.*

²⁷ *Id.* (citing 17 U.S.C. § 101 (1976)).

²⁸ John Zarocostas, *The Role of IP Rights in the Fashion Business: A US Perspective*, WIPO MAG. (Aug. 2018), http://www.wipo.int/wipo_magazine/en/2018/04/article_0006.html [<https://perma.cc/JJ9T-GZ5M>]. The Design Piracy Prohibition Act was introduced in 2009, the Innovative Design Protection and Piracy Prevention Act in 2010, and most recently, the Innovative Design Protection Act in 2012. *Id.*

²⁹ Innovative Design Protection Act of 2012, S. 3523, 112th Cong. (2d Sess. 2012).

³⁰ Innovative Design Protection and Piracy Prevention Act of 2011, H.R. 2511, 112th Cong. (2011).

³¹ Design Piracy Prohibition Act of 2009, H.R. 2196, 111th Cong. (2009).

³² S. 3523 § 2(a).

of original or non-original elements as incorporated in the overall appearance of the article of apparel that

“(i) are the result of a designer’s own creative endeavor; and

“(ii) provide a unique, distinguishable, non-trivial and non-utilitarian variation over prior designs for similar types of articles.

“(9) The term ‘design’ includes fashion design, except to the extent expressly limited to the design of a vessel.

“(10) The term ‘apparel’ means—

“(A) an article of men’s, women’s, or children’s clothing, including undergarments, outerwear, gloves, footwear, and headgear;

“(B) handbags, purses, wallets, tote bags, and belts; and

“(C) eyeglass frames. . . .”³³

Proponents of the IDPA challenge the view that clothing garments are merely useful articles, arguing that such a view ignores the possibility that “fashion design may be a form of creative expression deserving of protection.”³⁴ Nonetheless, despite not having legislation to protect fashion designs, there are still limited circumstances where American courts have invoked the doctrine of separability in copyright to distinguish between the artistic elements of a new fashion design and its basic function of covering the human body.³⁵ For instance, in *Star Athletica*, the Supreme Court held that:

[A] feature incorporated into the design of a useful article is eligible for copyright protection only if the

³³ *Id.*

³⁴ Yeh, *supra* note 25, at 9 (referring to A Bill to Provide Protection for Fashion Design: Hearings Before the House Subcomm. on Courts, the Internet, and Intellectual Property, 109th Cong., 2d Sess. (2006) (statement of Susan Scafidi, Associate Professor of Law, Southern Methodist University)).

³⁵ *See, e.g., Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 137 S. Ct. 1002, 1007 (2017).

feature (1) can be perceived as a two- or three-dimensional work of art separate from the useful article and (2) would qualify as a protectable pictorial, graphical, or sculptural work—either on its own or fixed in some other tangible medium of expression—if it were imagined separately from the useful article into which it is incorporated.³⁶

The Court determined that the designs in question (i.e., the designs for cheerleading uniforms) were protected under U.S. copyright law.³⁷ As exhibited in *Star Athletica*³⁸ and *Kieselstein-Cord v. Accessories*,³⁹ U.S. Federal Courts have had a recent history of granting copyright protection to clothing and accessory designs, but that is not the case for AI-generated designs.

Because designers already struggle with copyright protection in the United States,⁴⁰ their issues are only exacerbated by designs created partially or completely by AI devices.⁴¹ Specifically, problems arise in the meaning of the Copyright Act's "original work of authorship" requirement.⁴² This requirement must be defined and unpacked before the question of AI copyrightability can be answered. Case law and analyses by scholars shed light on the meaning of "original work of authorship."⁴³

B. What Is an "Original Work of Authorship" in the Context of Technological Advancements?

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

One of the first cases to ever discuss the "authorship" of a work produced with the help of technology is *Burrow-Giles*

³⁶ See *id.*

³⁷ *Id.*

³⁸ See *id.*

³⁹ *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 994 (2d Cir. 1980) (holding the sculptural elements of a designer's belt buckles were conceptually separable from their utilitarian function and were thus subject to copyright).

⁴⁰ Kuo, *supra* note 21.

⁴¹ Greene & Longobucco, *supra* note 1.

⁴² *Id.*

⁴³ See *infra* Part II.B. (defining and analyzing the meaning of "authorship").

Lithographic Co. v. Sarony.⁴⁴ In *Burrow-Giles*, the plaintiff, a photographer, sued the defendant, a lithographer,⁴⁵ for copyright infringement, and the Court had to determine whether to extend copyright protection to photographs.⁴⁶ The photographer claimed that he made many artistic choices in creating the photograph in question, “Oscar Wilde No. 18.”⁴⁷ These artistic choices included the form in which Oscar Wilde would pose, as well as the wardrobe, the background, the lighting, and the desired expression of grace.⁴⁸ The photographer therefore claimed that he was the “author” and “designer” of “Oscar Wilde No. 18.”⁴⁹ The lithographer argued that the photograph could not be protected because a photograph is not “the production of an author,”⁵⁰ but this argument was rejected.⁵¹

Instead, the Court defined an “author” as “he to whom anything owes its origin; originator; maker; one who completes a work of science or literature” and further explained that Congress intended for photographs to be protected by copyright law when it defined literary works to mean “forms of writing, printing, engraving, . . . by which the ideas in the mind of the author are given visible

⁴⁴ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884).

⁴⁵ AbeBooks.com, *What Is a Lithograph?*, YOUTUBE (Feb. 1, 2016), <https://www.youtube.com/watch?v=LLkbtBfzzbw> [<https://perma.cc/C3XA-HPUB>]. A lithographer is a person who reproduces a picture or printed matter on paper or other transferable substance using the process of lithography (using the grease in ink on stone and treating the stone so that when the printed matter is transferred, only the ink transfers). *Id.*

⁴⁶ *Burrow-Giles*, 111 U.S. at 58–59.

⁴⁷ *Id.* at 54.

⁴⁸ *Id.* The photographer in *Burrow-Giles* carefully situated Oscar Wilde so that his body expressed “graceful outlines” as to make the photograph being captured graceful overall. *Id.* at 60.

⁴⁹ *Id.* at 55.

⁵⁰ The lithographer used Section 8 of Article 1 of the Constitution to support this claim. *Id.* at 56. Section 8 states that Congress is authorized to “secur[e], for limited times to authors and inventors, the exclusive right to their respective writings and discoveries.” U.S. CONST. art. I, § 8. The argument was that “discoveries” are in reference to patent rights and under copyrights, only “writings” are of concern. *Burrow-Giles*, 111 U.S. at 56. It was thus argued that a photograph should not be awarded copyrights because “a photograph being a reproduction on paper of the exact features of some natural object or of some person, is not a writing of which the producer is the author.” *Id.*

⁵¹ *Id.* at 56.

expression.”⁵² The Court reasonably hypothesized that the photographs were not explicitly included in the law because, when the legislation was drafted, photographs did not exist.⁵³ This reasoning parallels the current state of copyright protection for AI devices, since at the time that current U.S. copyright laws were enacted, AI devices were not generating creative works of art and design.⁵⁴ The Copyright Act does, however, have the capacity to evolve as a statutory scheme to protect AI devices, as it has done numerous times in the last several decades.⁵⁵

In its *Burrow-Giles* opinion, the Court stated that the author of a work is “the person who has superintended the arrangement, who has actually formed the picture by putting the persons in position, and arrang[ed] the place where the people are to be—the man who is the effective cause of that.”⁵⁶ Using this definition, one could conclude that the camera used to take the photograph is nothing more than a tool used to create a work of art or design. Comparatively, an AI device is nothing more than a tool used to create fashion designs.⁵⁷

The Court in *Burrow-Giles* held that photographs deserve copyright protection “so far as they are representatives of original intellectual conceptions of the author.”⁵⁸ The Court compared engravings, paintings, and prints, which are listed as copyrightable under Section 4965 of the U.S. Revised Statutes, to photographs.⁵⁹ It further explained that photographs are not merely the mechanical

⁵² *Id.* at 58.

⁵³ *Id.*

⁵⁴ *See id.*; *see also infra* text accompanying notes 78–79.

⁵⁵ Brad Greenberg, *Copyright Law and New Technologies: A Long and Complex Relationship*, LIBR. CONGRESS (May 22, 2017), <https://blogs.loc.gov/copyright/2017/05/copyright-law-and-new-technologies-a-long-and-complex-relationship/> [<https://perma.cc/5BSQ-2BMZ>]. Greenberg used the history of the relationship between music and the Copyright Act to explain how adaptable copyright laws are to changes in technology. *Id.* Specifically, Greenberg highlighted how, at one point, the U.S. Supreme Court held that piano rolls could not infringe on copyrights because the copyright statute did not address “machine-readable” works, but just one year later, Congress expanded the statute to protect all “mechanical reproductions” of copyrighted music. *Id.*

⁵⁶ *Burrow-Giles*, 111 U.S. at 61 (citing *Nottage v. Jackson*, 11 Q.B.D. 627 (1883)).

⁵⁷ *See infra* Part II.A.

⁵⁸ *Burrow-Giles*, 111 U.S. at 58.

⁵⁹ *Id.* at 56.

reproduction of the visible representation of an animate or inanimate object and thus involving no intellectual exertion.⁶⁰ In fact, the artistic choices created by the photographer illustrated a process of creating an original work of art, as the photographer's choices demonstrated "intellectual invention, of which plaintiff is the author."⁶¹

2. *Lindsay v. Wrecked & Abandoned Vessel R.M.S. Titanic*

Almost a century later, the District Court for the Southern District of New York decided *Lindsay v. Wrecked & Abandoned Vessel R.M.S. Titanic*, a case that stands for the proposition that one need not physically take a photo to be the author of such photo.⁶² The plaintiff in *Lindsay* was a documentary filmmaker that agreed to work with one of the defendants, an expedition company (which had the status of salvor-in-possession⁶³ of the Titanic wreck site), to film the ship wreckage of the Titanic.⁶⁴ The filmmaker engaged in pre-production efforts, including the use of high-illumination lighting equipment, the creation of various story boards, drawings of the shipwreck to provide visuals of what would be filmed (including angles, objects, and other aspects of filming), and the design of underwater light towers.⁶⁵ Once the film preparation was done, the filmmaker then spent time directing, producing, and providing detailed instructions to photographers regarding the footage of the Titanic shipwreck.⁶⁶ The defendants in *Lindsay* argued that the filmmaker did not have any copyrights over the final product because the filmmaker had divers film the

⁶⁰ *Id.* at 58–59.

⁶¹ *Id.* at 60.

⁶² See *Lindsay v. Wrecked & Abandoned Vessel R.M.S. Titanic*, No. 97-CV-9248 (HB), 1999 U.S. Dist. LEXIS 15837, *15–16 (S.D.N.Y. Oct. 12, 1999).

⁶³ A "salvor-in-possession" is a person or entity that engages in salvaging a ship or items lost at sea, who also acquires legal (possessory) rights over remains recovered from the salvaging site. *Response to Heritage Protection for the 21st Century*, JOINT NAUTICAL ARCHAEOLOGY POL'Y COMMITTEE 5 (May 2007), <http://www.jnipc.org.uk/HeritageProtectionResponse-JNAPC-May07.pdf> [<https://perma.cc/59D9-FHJ7>]; see also *Salvor*, LEXICO (2019), <https://en.oxforddictionaries.com/definition/salvor> [<https://perma.cc/8VEC-4JSY>].

⁶⁴ *Lindsay*, 1999 U.S. Dist. LEXIS 15837, at *4.

⁶⁵ *Id.* at *6.

⁶⁶ *Id.* at *6–7.

shipwreck and was not the one who dove underwater and directly captured the footage.⁶⁷

Fittingly, the Court held that the defendants' arguments did "not hold water."⁶⁸ Citing Section 201(a) of the Copyright Act of 1976, the Court explained that ownership "vests initially in the author or authors of the work."⁶⁹ *Lindsay* provided the intellectual property world with another definition for "author": "[a] person who translates an idea into a fixed, tangible expression entitled to copyright protection."⁷⁰ The Court opined that while it makes sense to think that only the videographer of what is being filmed can own the copyrights, to construe the statute this narrowly would be improper.⁷¹

Instead, the Court found a broader construction of the statute to be more fitting. It explained that to be the author of a copyrightable object, one must show "the existence of . . . intellectual production, of thought, and [of] conception."⁷² All of the filmmaker's pre-production efforts were considered and it was determined that his combination of contributions, in addition to the detailed instructions provided to the film crew regarding the angles, footage, and lighting evidenced that the final product, which resulted from such footage, was a "product of [the filmmaker]'s 'original intellectual conceptions.'"⁷³ All of the contributions made by the filmmaker demonstrated a high level of control over the entire underwater expedition.⁷⁴ These contributions were then displayed in the documentary and thus illustrated the filmmaker's status as an "author," deserving of copyrights.⁷⁵

⁶⁷ *Id.* at *12–13.

⁶⁸ *Id.* at *13.

⁶⁹ *Id.*

⁷⁰ *Id.* (citing *Community for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989)).

⁷¹ *Id.*

⁷² *Id.* at *14 (citing *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 59–60 (1884)).

⁷³ *Id.*

⁷⁴ *Id.* at *15–16.

⁷⁵ *Id.* at *15–16.

3. *Andrien v. Southern Ocean County Chamber of Commerce*

Similarly, the Third Circuit has also recognized that an entity may be an author when it uses mechanical means to transform an idea into something tangible.⁷⁶ This construction of “author” stems from acknowledging that writers have copyrights over their work despite not using their own hands to put the material into the proper form distributed to the public.⁷⁷ In *Andrien*, the plaintiff created a map by integrating preexisting maps, and hired a printing company to print the final version of his map.⁷⁸ Unlike the typical consumer who goes into a printing shop, provides an employee with the pictures or files to be printed, places an order, and returns only to pick up the final product, the plaintiff in this case was much more involved.⁷⁹ The *Andrien* plaintiff spent time each day at the printing facility while the final version of the map was being printed.⁸⁰ Further, similar to the filmmaker in *Lindsay* who directed his underwater film crew, the plaintiff in *Andrien* gave the printing center employee specific, detailed instructions on how the map should be printed.⁸¹

In addition to explaining why the plaintiff in *Andrien* deserved copyright for his map, the Court clarified why the printing company should *not* be granted copyright.⁸² The Court noted that the printing company never engaged in activities that would constitute “intellectually modif[ying] or technically enhanc[ing] the concept articulated by [the plaintiff],” nor the plaintiff’s original expression.⁸³ The printers merely arranged the plaintiff’s expression in a photographable form.⁸⁴

⁷⁶ See *Andrien v. Southern Ocean County Chamber of Commerce*, 927 F.2d 132, 135 (3d Cir. 1991).

⁷⁷ *Id.*

⁷⁸ See *id.* at 133.

⁷⁹ See *id.* at 135.

⁸⁰ See *id.* at 133.

⁸¹ See *id.* at 136. Along these same lines, the Fifth Circuit has held that the Copyright Act does not require an artist to use their bare hands to manifest the work that becomes available to the public. See *Lakedreams v. Taylor*, 932 F.2d 1103, 1108 (5th Cir. 1991).

⁸² *Andrien*, 927 F.2d at 135.

⁸³ See *id.*

⁸⁴ *Id.*

4. Scholarly Critiques of the “Original Work of Authorship” in the Modern Technological Era

While *Burrow-Giles* provided many definitions of who constitutes an author that have remained influential for subsequent courts,⁸⁵ these definitions have encountered academic criticism.⁸⁶ According to Professor of English Martha Woodmansee, the word “author” means an individual who is the “sole creator of unique ‘works’ the originality of which warrants their protection under laws of intellectual property known as ‘copyright’ or ‘authors’ rights.”⁸⁷ However, context is important to note here. Woodmansee’s article on authorship refers to writing and literature generally,⁸⁸ which do not involve the same type of artistic application as fashion design.⁸⁹ Even so, Woodmansee acknowledges that there is a growing collaborative nature in modern authorship, which is depreciating the solitary and originary⁹⁰ “illusion.”⁹¹

Like Woodmansee, who refers to the solitary and originary characteristics in writing as an “illusion,” this Note posits that the

⁸⁵ See *Conan Props. Int’l LLC v. Sanchez*, No. 17-CV-162 (FB), 2018 U.S. Dist. LEXIS 98631, at *21 (E.D.N.Y. June 8, 2018); see also *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346–47 (1991) (using the *Burrow-Giles* opinion almost exclusively to determine who is considered an “author” within the meaning of copyright law).

⁸⁶ See, e.g., Martha Woodmansee, *On the Author Effect: Recovering Collectivity*, 10 CARDOZO ARTS & ENT. L.J. 279 (1997) (explaining that an author must be the sole creator).

⁸⁷ *Id.*

⁸⁸ See *id.*

⁸⁹ For example, the former may be considered more verbal while the latter may be considered more photographic and nonverbal expression. It is possible that, because these types of works have different artistic applications, AI-generated designs are protected outside of the copyright law’s Section 102(a) eight categories. See 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.03[A] (2019) (explaining that “Congress elected in 1976 not to exercise its full authority to provide for copyright protection of all ‘writings’ (the same as it decided in 1909 when enacting the predecessor statute). On the other hand, it is also clear that ‘works of authorship’ are not necessarily limited to the eight broad categories of works listed under Section 102(a).”).

⁹⁰ English Oxford Dictionaries defines “originary” as something “[t]hat is the origin or source of something; that gives rise to, or causes the existence of, something.” *Originary*, LEXICO, <https://en.oxforddictionaries.com/definition/originary> [<https://perma.cc/MN2F-25AZ>].

⁹¹ Woodmansee, *supra* note 86, at 289. Woodmansee goes on to explain that “our laws of intellectual property are rooted in the century-long reconceptualization of the creative process . . . this process ought to be solitary, or individual, and introduce ‘a new element into the intellectual universe.’” *Id.* at 291.

idea of a completely original design created solely by one person is often just that: an illusion. To provide some context to this notion, think about the twenty-first century, where the speed of the internet and the impact of social media challenge designers by facilitating infringement or copying.⁹² Meanwhile, designers frequently look at trends started by others for a source of inspiration.⁹³ Thus, in the fashion industry, there has been a longstanding tension regarding where to draw the line between inspiration and outright plagiarism.⁹⁴

The tension evoked when distinguishing inspiration and plagiarism may be attributed to the missing concrete definition of “authorship.” The *Compendium of Copyright Office Practices* (“*Compendium*”), for instance, discusses the possibilities of when someone would be considered an author, but the list is non-exhaustive and not concrete.⁹⁵ Like Woodmansee, the *Compendium* also interprets “authorship” to be “human authorship.”⁹⁶ Yet, the

⁹² Helena Pike, *What Are the Consequences of Copyright?*, BUS. OF FASHION (Mar. 14, 2016), <https://www.businessoffashion.com/community/voices/discussions/what-is-the-real-cost-of-copycats/fashions-copycat-economy> [<https://perma.cc/6BRU-L7ZF>].

⁹³ Steven Bradley, *The Line Between Inspired by and Copied from and How to Stay on Its Right Side* (May 30, 2013), <https://vanseodesign.com/web-design/inspired-by-copied-from/> [<https://perma.cc/FV5M-HMJK>].

⁹⁴ *Id.*

⁹⁵ The *Compendium* is the administrative manual providing instruction to the Copyright Office’s mandate and statutory duties under Title 17 of the United States Code. U.S. COPYRIGHT OFF., *COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES* (3d ed. 2017) [hereinafter “*Compendium*”]. Additionally, it “provides expert guidance to copyright applicants, practitioners, scholars, the courts, and members of the general public regarding institutional practices and related principles of law.” *Id.*

⁹⁶ Section 313.2 of the *Compendium* states:

To qualify as a work of “authorship” a work must be created by a human being. . . . The Office will not register works produced by nature, animals, or plants. Likewise, the Office cannot register a work purportedly created by divine or supernatural beings, although the Office may register a work where the application or the deposit copy(ies) state that the work was inspired by a divine spirit.

Examples:

- A photograph taken by a monkey.
- A mural painted by an elephant.
- A claim based on the appearance of actual animal skin.
- A claim based on driftwood that has been shaped and smoothed by the ocean.
- A claim based on cut marks, defects, and other qualities found in natural stone.

Compendium states that in order to be an original work of “authorship,” the work must contain “at least a minimum amount of creative authorship that is original to the author.”⁹⁷ Thus, the *Compendium* simply does not fully account for the current and future use of AI devices to create fashion designs.⁹⁸

C. Human Authorship in AI-Generated Fashion Designs

Section 313.2 of the *Compendium* states that “works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author” are not registrable.⁹⁹ By focusing on the word “any” in Section 313.2, one could interpret this section to mean that as long as there is “some” contribution by a human author, such works are registrable.¹⁰⁰ The way that the fashion industry currently utilizes AI

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- An application for a song naming the Holy Spirit as the author of the work.

Similarly, the Office will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author.

Examples:

- Reducing or enlarging the size of a preexisting work of authorship.
- Making changes to a preexisting work of authorship that are dictated by manufacturing or materials requirements.
- Converting a work from analog to digital format, such as transferring a motion picture from VHS to DVD.
- Declicking or reducing the noise in a preexisting sound recording or converting a sound recording from monaural to stereo sound.
- Transposing a song from B major to C major.
- Medical imaging produced by x-rays, ultrasounds, magnetic resonance imaging, or other diagnostic equipment.
- A claim based on a mechanical weaving process that randomly produces irregular shapes in the fabric without any discernible pattern.

Id.

⁹⁷ *Id.* at § 309.

⁹⁸ *Id.* at § 312.3; *see also* Greene & Longobucco, *supra* note 1.

⁹⁹ *Compendium*, *supra* note 95, at § 313.2.

¹⁰⁰ *Id.*; *see also* *Any*, MERRIAM-WEBSTER ONLINE DICTIONARY, <https://www.merriam-webster.com/dictionary/any> [<https://perma.cc/N9LT-BTUY>] (defining “any” as “one, some, or all indiscriminately of whatever quantity . . .”).

devices requires that humans have to have *some* part in the process—whether it is creating the AI device or the algorithm the AI device will use, or determining what patterns, colors, customer history, or trends should be in the database that the AI system will use to create the designs.¹⁰¹ So, what does this mean for AI-generated and AI-assisted fashion designs? To discover the answer to this question and understand all resulting implications of the potential answer, a further investigation into current and future AI capabilities is necessary.

As discussed above, AI is computer technology that is meant to mirror human behavior.¹⁰² For instance, AI devices can now create fashion designs, a cognitive task typically performed by humans.¹⁰³ Currently, AI acts as a self-learning machine by processing great quantities of information and analyzing that information to create a work.¹⁰⁴ Despite its ability to self-learn, AI machines remain dependent on the data that a programmer inputs.¹⁰⁵ Thus, AI can generate products in many different ways depending on how the AI programmer inputs data into the AI device.¹⁰⁶ For example, CLO¹⁰⁷ is a platform that works in the following way: 1) a customer inputs style preferences and measurements into the system; 2) the AI system synthesizes the customer’s preferences and applies them to

¹⁰¹ Greene & Longobucco, *supra* note 1; *see also* Schlackman, *supra* note 22 (using the analogy of music to explain how computer-generated works may be copyrightable). Schlackman states that “creating a song by pressing a button on a random number music generator isn’t going to receive copyright protection on the resulting musical composition.” Schlackman, *supra* note 22. “But if the user provides some input that affects the song being generated, such as choosing the instruments, deciding on the key or tempo, or choosing a musical style for the composition, then the final musical composition may be due to creative input and therefore copyrightable.” *Id.*

¹⁰² Greene & Longobucco, *supra* note 1.

¹⁰³ *Id.*

¹⁰⁴ Nezami, *supra* note 3.

¹⁰⁵ *Id.*

¹⁰⁶ *The Future of Fashion: From Design to Merchandising, How Tech Is Reshaping the Industry*, CB INSIGHTS, <https://www.cbinsights.com/research/fashion-tech-future-trends/> [https://perma.cc/TZ34-ECED] [hereinafter *Future of Fashion*].

¹⁰⁷ CLO is a three-dimensional fashion design software program that brings virtual clothes to life. *See generally* CLO, <https://www.clo3d.com/> [https://perma.cc/37W7-MPUA]; *see also* *Our Story*, CLO, <https://www.clovirtualfashion.com/story> [https://perma.cc/S8MC-HQ9S] (explaining the story behind creating CLO and the programs derived from the initial CLO software).

trending styles and past e-commerce learnings; 3) the customer can virtually “try-on” the clothing items designed by the AI; 4) the three-dimensional (3D) platform creates the clothing item(s) using robotic tailors; and 5) the customer gets their clothing items and wears them.¹⁰⁸ In a way, the AI acts as a stylist, seamstress, tailor, and manufacturer all in one.¹⁰⁹

Stitch Fix exemplifies human involvement in AI-generated creations.¹¹⁰ Stitch Fix uses algorithms to design its clothes, yet the company does not eliminate human designers in the process.¹¹¹ AI Reporter Dave Gershgorn explains that although “software might be able to make a mathematically perfect piece of clothing, . . . it still can’t evaluate the cultural context that makes said piece fit (or not fit) into this season’s fashion zeitgeist.”¹¹² Likewise, even the National Commission on New Technological Uses of Copyrighted Works (“CONTU”) recognized that computer systems, like AI devices, cannot do anything without human involvement.¹¹³ Thus, human involvement plays a big factor in how courts should be interpreting existing copyright law.¹¹⁴ Law Professor Edward Lee suggests that the courts “ask[] whether the work in question (1) was

¹⁰⁸ See generally Future of Fashion, *supra* note 106.

¹⁰⁹ See *id.*

¹¹⁰ Dave Gershgorn, *Stitch Fix Is Letting Algorithms Help Design New Clothes—and They’re Allegedly Flying off of the Digital Racks*, QUARTZ (July 16, 2017), <https://qz.com/1028624/stitch-fix-let-an-algorithm-design-a-new-blouse-and-they-flew-off-the-digital-racks/> [<https://perma.cc/UGJ7-YUBH>] (describing the process of AI-generated designs to be “[a] collection of three algorithms generat[ing] a starting point”).

The first algorithm picks three ‘parents,’ recommended pieces of clothing that could be either combined or used as a template for a new piece. The second suggests three different attributes that have been shown to compliment the parents’ style—maybe a different neckline or sleeves. And the third throws in a little bit of randomness, a suggestion that isn’t typical for the previously suggested style but might be interesting. Together, these algorithms search through a space of 30 trillion potential combinations of, for example, blouse attributes, to ultimately give just nine suggestions.

Id.

¹¹¹ *Id.* (explaining that designing is a team effort between the humans and the AI).

¹¹² See *id.*

¹¹³ Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1058 (1993).

¹¹⁴ See *supra* note 8; see also *supra* notes 102–05 and accompanying text.

independently produced, (2) in a way that required the creative powers of the mind and resulted in a creation that falls within the subject matter of copyright, and (3) possesses a modicum of creativity.”¹¹⁵

The future of AI in fashion design is such a growing area of interest because it can help designers with multiple aspects of the industry.¹¹⁶ For example, look at France, a country famous for its fashion industry, which has expanded its use of AI beyond design and has started manufacturing clothes using AI.¹¹⁷ While France’s shift in manufacturing may cause issues for “Third World” countries that typically produce the clothes for French fashion designers, the use of AI is saving such designers money by keeping production local.¹¹⁸

AI can also help the fashion industry solve the problem that it has created amongst its consumer society—a wasteful culture that encourages consumers to keep buying things that they do not need.¹¹⁹ Currently, consumers often guess their size for a particular brand, order clothing online, then return their clothing due to fit or style dissatisfaction.¹²⁰ AI devices can eliminate the amount of returns by ensuring that every clothing item purchased not only fits the consumer perfectly, but also arrives already tailored to the

¹¹⁵ Edward Lee, *Digital Originality*, 14 *VAND. J. ENT. & TECH. L.* 919, 957 (2012) (claiming that “[t]his test offers a more precise way to analyze whether originality exists in digital creations, especially in cases of first impression involving new technologies”).

¹¹⁶ See, e.g., Greene & Longobucco, *supra* note 1.

¹¹⁷ Wendy N. Duong, *Ghetto’ing Workers with Hi-Tech: Exploring Regulatory Solutions for the Effect of Artificial Intelligence on “Third World” Foreign Direct Investment*, 22 *TEMP. INT’L & COMP. L.J.* 63, 88 (2008).

¹¹⁸ *Id.* at 89.

¹¹⁹ Paula Coccozza, *Don’t Feed the Monster! The People Who Have Stopped Buying New Clothes*, *GUARDIAN* (Feb. 19, 2019), <https://www.theguardian.com/fashion/2019/feb/19/dont-feed-monster-the-people-who-have-stopped-buying-new-clothes> [<https://perma.cc/9B24-KMLE>].

¹²⁰ Roughly 40% of online clothing purchases are returned to stores, and when customers buy multiple sizes, that percentage increases to 50%. Lars Rabe, *The War on Waste: Why Artificial Intelligence Is Making the Fashion Industry Greener*, *ESSENTIAL RETAIL* (July 12, 2019), <https://www.essentialretail.com/comments/the-war-on-waste/> [<https://perma.cc/3XBT-QZNP>]. This unnecessary return process costs money and harms the environment as more carbon dioxide is released into the atmosphere by the modes of return transportation. *Id.*

customer's personal style.¹²¹ AI devices can ensure this level of satisfaction by using 3D measurements taken online or using a virtual stylist to show consumers what an item of clothing would look like on their body.¹²² For instance, Levi Strauss & Co. created a virtual stylist using a combination of its human stylists' expertise and AI.¹²³ The virtual stylist asks each consumer how they would like their jeans to fit in terms of "leg shape, rise and stretch."¹²⁴ Once the consumer has responded, the virtual stylist uses sizing information from a database to issue a tailored sizing recommendation.¹²⁵

Having clothes that fit better is a key to sustainability because if customers are satisfied with fit and style, they will value their ordered clothes more and wear them for longer.¹²⁶ There is a growing trend in the twenty-first century for fashion to become more sustainable and reprogramming could contribute to this trend.¹²⁷ If AI devices reprogram clothes so that clothes last longer and consumers therefore do not need to go out and buy more clothes to replace them, a decrease in demand will likely result and thus a demand for production is likely to decrease as well.¹²⁸

Besides these aforementioned fashion uses, AI systems have also played the role of design assistant.¹²⁹ This year, Tommy Hilfiger, International Business Machines Corporation ("IBM"), and New York's Fashion Institute of Technology ("FIT") formed a project where students created designs for the Tommy Hilfiger

¹²¹ *Id.*; see also Quartz, *How Artificial Intelligence Is Reprogramming Fashion*, NEW TIMES (Sept. 23, 2018), <https://www.newtimes.co.rw/news/how-artificial-intelligencea-reprogramming-fashion> [<https://perma.cc/7F6M-Z7SB>].

¹²² Quartz, *supra* note 121.

¹²³ Levi's® *Launches New 'Virtual Stylist' Online Feature*, LEVI STRAUSS & CO. (Aug. 31, 2017), <https://www.levistrauss.com/2017/08/31/levis-launches-new-virtual-stylist-online-feature/> [<https://perma.cc/E4EW-TDFR>].

¹²⁴ *Id.*

¹²⁵ *See id.*

¹²⁶ See, e.g., Timothy Parent, *How to End Waste in Fashion: Stop Making Clothes, or Value the Ones We Have Already?*, S. CHINA MORNING POST (Feb. 10, 2019), <https://www.scmp.com/lifestyle/fashion-beauty/article/2185376/how-end-waste-fashion-stop-making-clothes-or-value-ones-we> [<https://perma.cc/7Y43-PHGX>] (unpacking the potential solutions to fashion's waste problem); see also Quartz, *supra* note 121.

¹²⁷ Cadogan, *supra* note 4.

¹²⁸ *Id.*

¹²⁹ Greene & Longobucco, *supra* note 1.

brand using IBM’s AI tools.¹³⁰ These tools were programmed with a database of 15,000 images of designs from past Tommy Hilfiger collections.¹³¹ The AI acted as a design assistant by generating fabric patterns, colors, and silhouettes, and aided the students in creating their final clothing design.¹³² While the students had the help of the AI as a “smart design assistant,” the students nonetheless were responsible for conducting color trend analysis, looking out for social media trends, and monitoring product supply.¹³³ The FIT student involvement is further evidence of the heavy amount of human input that takes place when AI is used as a tool to create fashion designs.

Fashion designers in the industry are going to be using AI more for all of the reasons mentioned in Part I.C. of this Note. The project with IBM thus raises two important questions. First, will these AI-assisted designs created by human designers be copyrightable? Second, if the designs are copyrightable, who will own their copyrights to these designs? The latest version of the *Compendium* was published in 1984, long before fashion designers were partnering with technology companies and programmers to create designs for their brands.¹³⁴ Between 1984 and today, however, two federal courts have spoken to the issue of the copyrightability of a non-human created work.¹³⁵

II. ANALOGIES TO AI

A. *Analogy to Animal “Authorship”*

The Ninth Circuit has determined that animals have constitutional standing under Article III to claim copyright by implying that they may be awarded copyright protection for their artistic creations,

¹³⁰ *Id.*

¹³¹ *Id.* IBM also provided FIT with 500,000 images from runway shows worldwide. Cadogan, *supra* note 4.

¹³² Greene & Longobucco, *supra* note 1.

¹³³ Cadogan, *supra* note 4.

¹³⁴ *Compendium*, *supra* note 95.

¹³⁵ *Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018); *see also Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982).

even though they lack statutory standing under the Copyright Act.¹³⁶ Although *Naruto v. Slater* (also known as the “monkey selfie” case) did not involve machine-produced creations, the case can be used to predict future judicial interpretations regarding copyrightability of other non-human creations. In *Naruto*, a monkey in Indonesia took multiple photographs of himself (known as “selfies”) when a professional nature photographer left his camera unattended in a reserve.¹³⁷ The photographer later used these selfies in a book that he published.¹³⁸ As a result, People for the Ethical Treatment of Animals (“PETA”) sued the photographer and others for copyright infringement, claiming standing as an organization that “establish[es] the rights and legal protections available to animals beyond their utility to human beings.”¹³⁹ The complaint alleged that the monkey was the owner of the selfies.¹⁴⁰ The Ninth Circuit determined that the monkey lacked statutory standing to bring a copyright infringement claim under the Copyright Act because it was not human.¹⁴¹

Conversely, when it comes to AI devices used in the fashion industry, it is unlikely that the brands would sue on behalf of the AI systems and more likely that they would sue on behalf of themselves, claiming ownership of the AI-created designs.¹⁴² Further, AI devices are created by man-made materials and processes, unlike a monkey that is birthed by other monkeys or created using a combination of genetic material and manmade

¹³⁶ *Naruto*, 888 F.3d at 420. Constitutional and statutory standing are different types of standing. In this case, when the Ninth Circuit analyzed the law on constitutional standing, it held that “Article III does not compel the conclusion that a statutorily authorized suit in the name of an animal is not a ‘case or controversy.’” *Id.* at 424 (citing *Cetacean Cmty. v. Bush*, 386 F.3d 1169, 1175 (9th Cir. 2004)). On the other hand, the power to sue for copyright infringement requires standing under the Copyright Act’s statute. *Id.* The Court explained that “[i]f the statute does not so plainly state, then animals do not have statutory standing. The Copyright Act does not expressly authorize animals to file copyright infringement suits under the statute.” *Id.* at 426.

¹³⁷ *See id.* at 420.

¹³⁸ *Id.*

¹³⁹ *See id.*

¹⁴⁰ *Id.* at 425.

¹⁴¹ *Id.* at 420.

¹⁴² Greene & Longobucco, *supra* note 1.

processes.¹⁴³ It has also yet to be determined exactly how much of the design compilation that an AI device creates is human creation versus the AI itself. Herein lies the confusion.¹⁴⁴ In analogizing the animal authorship issue in *Naruto* to machine creations, one could conclude that a fabric pattern created purely by AI and art created purely by a monkey would be equally uncopyrightable, because both works are non-human creations.¹⁴⁵ It is unclear, however, how much AI involvement each brand or designer currently utilizes in creating fabric patterns or how much AI involvement will take place in the future of the fashion industry.¹⁴⁶ Without knowing the degree of AI involvement, it is hard to understand exactly when a design stops being considered human-created.¹⁴⁷

Some scholars have opined that for the photographer in *Naruto* to own a valid copyright of the selfies, he would have needed to be more engaged with the creation process¹⁴⁸—for example, by controlling the background, lighting, or the angles in which the monkey took the photographs.¹⁴⁹ According to copyright attorney Mark A. Fischer,¹⁵⁰ pressing the shutter button on the camera is a final functional step that does not determine creativity nor copyright ownership.¹⁵¹

¹⁴³ Jen Christensen, *Monkey See, Monkey 2: Scientists Clone Monkeys Using Technique that Created Dolly the Sheep*, CNN (Jan. 25, 2018), <https://www.cnn.com/2018/01/24/health/cloned-monkeys-study/index.html> [<https://perma.cc/3GYZ-BREK>] (reporting how monkeys were successfully cloned for the first time).

¹⁴⁴ Greene & Longobucco, *supra* note 1.

¹⁴⁵ *See Naruto*, 888 F.3d at 420; *see also* text accompanying note 140.

¹⁴⁶ Greene & Longobucco, *supra* note 1.

¹⁴⁷ *Id.*

¹⁴⁸ Fischer, *supra* note 7.

¹⁴⁹ *Id.*

¹⁵⁰ Bryan Marquard, *Mark Fischer: A Lawyer Who Helped Define Copyright in the Internet Age*, DUANE MORRIS (Feb. 24, 2015), https://www.duanemorris.com/news/mark_fischer_a_lawyer_who_helped_define_copyright_in_the_internet_age_5464.html [<https://perma.cc/2PFA-KP4W>].

¹⁵¹ Fischer, *supra* note 7. However, even if there was a high degree of human involvement, current law may not support copyright protection being awarded to fashion designers when their designs are created by AI devices. *Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.*, 528 F.3d 1258, 1260 (10th Cir. 2008) (acknowledging that ninety percent of the digital models created by Meshwerks and computers, was created by the “skill and effort its digital sculptors manually expended . . .”). *Naruto* was decided similarly to *Meshwerks*, where the Tenth Circuit ruled that a digital car model co-created by humans and computers lacked originality and, therefore, was not copyrightable.

Nonetheless, it is possible that despite human involvement or the lack thereof, *Naruto* could have still come out differently if the animal at issue was domesticated, rather than wild.¹⁵² For instance, the monkey in *Naruto* could have been owned by a reserve, corporation, organization, or individual person. One could argue that those kinds of monkeys are owned by that particular entity and, therefore, that entity is responsible for everything that those monkeys do, whether good or bad.¹⁵³

Fischer claims that inevitably, copyright law will have to protect such non-human copyrights, possibly to the benefit of the corporations that gave them “life.”¹⁵⁴ Similarly, with the determination that computer-generated designs are copyrightable comes the question of who would own the copyrightable designs.¹⁵⁵ Some scholars argue that there are only three potential owners: (1) the AI programmer; (2) the owner of the AI (the large company financing its development); or (3) the end user.¹⁵⁶ Others go so far as to say that the AI device itself should own the copyright.¹⁵⁷ If the AI itself owned the

Meshwerks, 528 F.3d at 1260. *Meshwerks* is distinguishable because that case revolved around a work-for-hire digital car model that was made to “copy” a Toyota car, not original designs generated by Meshwerks and its computers. *Id.* (explaining that “[w]hile fully appreciating that digital media present new frontiers for copyrightable creative expression, in this particular case the uncontested facts reveal that Meshwerks’ models owe their designs and origins to Toyota and deliberately do not include anything original of their own”).

¹⁵² Ryan E. Long, *Artificial Intelligence Art—Who Owns the Copyright?*, CTR. FOR INTERNET & SOC’Y (May 9, 2018, 2:42 PM), <http://cyberlaw.stanford.edu/blog/2018/05/artificial-intelligence-art-who-owns-copyright-0> [<https://perma.cc/3B64-3LDX>]. Long makes the argument that “any art created by animals who reside on government owned reserves or private property would be owned by the reserve or property owner.” *Id.*

¹⁵³ Common law courts have held owners strictly liable for wild animals that have injured other people, meaning no fault is required. See *Franken v. Sioux Center*, 272 N.W.2d 422 (Iowa 1978), where a zoo was held strictly liable for one of its tigers biting the plaintiff. See also *Pingaro v. Rossi*, 322 N.J. Super. 494 (Super. Ct. App. Div. 1999), where plaintiff was awarded damages for getting bitten by defendant’s dog.

¹⁵⁴ Fischer, *supra* note 7.

¹⁵⁵ Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 J. FRANKLIN PIERCE CTR. INTELL. PROP. 431, 443 (Sept. 1, 2016), https://www.ipmall.info/sites/default/files/hosted_resources/IDEA/hristov_formatted.pdf [<https://perma.cc/WM9K-YCDJ>].

¹⁵⁶ *Id.*

¹⁵⁷ Andrew J. Wu, *From Video Games to Artificial Intelligence: Assigning Copyright Ownership to Works Generated by Increasingly Sophisticated Computer Programs*, 25 AIPLA Q. J. 131, 158 (1997).

copyright, it would be much more analogous to compare the monkey and his selfie in *Naruto* to AI and its fashion designs.¹⁵⁸ However, applying Fischer’s logic, AI-created designs would belong to the brands or designers that use the AI to create their final product or collection.¹⁵⁹

When determining which entity would own the copyright, consider the metaphor of who is whispering in whose ear. In this metaphor, the whisperer is likely to be the one with power as the entity that has the bigger hand, much like many other aspects of our society. For example, the unequal bargaining power exerted by record labels against artists, independent contracting editors, and marketers when it comes to recording agreements, corporate boardrooms, employment contracts, and other types of business interactions demonstrates this power dynamic.¹⁶⁰ In the fashion industry context, the fashion brand is likely to have the most bargaining power because it is the client and likely paying a lot of money to license or internally develop AI technology. Further, fashion designers do not *have to* use AI to generate designs,¹⁶¹ which means

¹⁵⁸ This discussion, however, is outside the scope of this Note.

¹⁵⁹ Fischer, *supra* note 7 (explaining that for the photographer in *Naruto* “to own a valid copyright . . . he would have had to have undertaken more to create the images,” which in the fashion context, designers do more to create the images—they provide the programmer with instructions on the type of data fed to the AI device); *see also infra* notes 242–45 and accompanying text (elaborating on the fact that AI merely reveals a final product; but, without the designer, there is no design).

¹⁶⁰ Todd M. Murphy, *Crossroads: Modern Contract Dissatisfaction as Applied to Songwriter and Recording Agreements*, 35 J. MARSHALL L. REV. 795, 797 (2002). These are examples of unequal bargaining power because they are situations where one party to the contract has the money for a good lawyer, they may have more experience with the subject matter and might approach the negotiation on a take-it-or-leave-it basis. *Id.* at 816. Meanwhile, the other party is unlikely to have those same advantages. *Id.* In the music context, unequal bargaining power exists because new or unsigned artists may be young, inexperienced, ignorant to the best way to conduct business, untrained in the law and more specifically, untrained in the law of contract. *Brown v. Death Row Records (In re Brown)*, 219 B.R. 373, 383 (Bankr. E.D. Pa. 1998) (illustrating how artists often lack bargaining power against music industry companies). Other areas of unequal bargaining power are displayed in areas of politics, other types of business deals and human relationships. Daniel D. Barnhizer, *Inequality of Bargaining Power*, 76 U. COLO. L. REV. 139, 140 (2005).

¹⁶¹ Fashion designers have been designing clothes since before AI was invented. *See, e.g.,* Mary Bellis, *The History of Clothing*, THOUGHT CO. (June 29, 2019), <https://www.thoughtco.com/history-of-clothing-1991476> [https://perma.cc/M2W2-ZAPC].

that they do not need a programmer as much as the programmer may need them. As discussed in depth in Part I.C., it is not the programmer telling the fashion designer or brand what to do in terms of the creative process; rather, it is the designer telling the programmer what the AI's database should entail.¹⁶² While the AI programmer might tell the fashion designer what the current limit of the AI device is, this is a small role in the grand scheme of things when considering the end product—a finalized item of clothing.

In *Naruto*, the monkey created his own photographs without any help from or even in the presence of the photographer.¹⁶³ With AI, the algorithm or database on which the designs are based is created by humans.¹⁶⁴ Some commentators on the issue of AI-created ownership argue that because of the requisite human involvement to create and maintain the AI, the AI programmer is the author.¹⁶⁵ Despite the disagreement on the ownership issue, most commentators seem to agree that a human being or legal entity should be the owner of a computer-generated work.¹⁶⁶ This consensus exists despite the lack of statutory language to clarify such a solution.¹⁶⁷ This analysis is important for the copyright analysis because, in the event that copyrights are granted for AI-generated fashion designs, it is crucial to determine which entity would be afforded such copyright protection. The alternative to providing copyright protection to the brand or designer is to provide copyrights to everyone involved in making the AI device.¹⁶⁸ However, providing copyright

¹⁶² See *supra* Part I.C.

¹⁶³ *Naruto v. Slater*, 888 F.3d 418, 420 (9th Cir. 2018).

¹⁶⁴ Greene & Longobucco, *supra* note 1.

¹⁶⁵ See, e.g., Dan Rosen, *A Common Law for the Ages of Intellectual Property*, 38 U. MIAMI L. REV. 769, 804 (1984). Rosen opined: “Artificial intelligence programmers are indeed the authors of their computers’ works. Although the machines make decisions on their own, those decisions are made within confines established by the programmer/artist.” *Id.*

¹⁶⁶ Miller, *supra* note 113, at 1058.

¹⁶⁷ CONTU has refused to comment on the lack of clarification. “The development of this capacity for ‘artificial intelligence’ has not yet come to pass, and, indeed, it has been suggested to this Commission that such a development is too speculative to consider at this time.” NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT 44 (1979).

¹⁶⁸ Schlomit Yanisky-Ravid, *Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era—The Human-Like Authors Are Already Here—A New Model*, 2017 MICH. ST. L. REV. 659, 698 (2017). Examples of those who may be involved

to all contributors could negatively impact fashion brands and independent designers, as they lose control over the commercial use of the AI device that they purchased, in addition to the designs that resulted from such a purchase.¹⁶⁹

Because the judicial system has not yet investigated this question, other analogies that might afford protection to fashion designs created with the help of AI must be examined. First, AI-assisted fashion designs can be analogized to audiovisual displays created by computer programs.¹⁷⁰

B. Analogy to Computer and Human “Co-Authorship”

Law Professor Dan Rosen worded the analogy of photographs and computer-generated works of art beautifully: “one might say that the computer is only the artist’s brush—the means he uses to create. Thus, its output would be copyrightable in the name of the artist.”¹⁷¹ Analogizing the authorship issue in *Burrow-Giles*¹⁷²—i.e., whether a photographer is the author of a photograph—to computer-generated works, Rosen narrowly applied the Court’s interpretation of “author” to conclude that AI programmers are the true “authors of their computers’ works.”¹⁷³

Rosen did, however, explain that his conclusion results from an understanding that the decisions which machines “make” are in fact decisions made within confines established by the programmer or artist.¹⁷⁴ One such example is the pictures that are provided to AI devices so that the AI can generate different drawings. Rosen acknowledged that even though a programmer cannot anticipate the final product, a programmer’s human contribution is vital to the existence of the final product.¹⁷⁵ According to Rosen, making the decision to use AI devices itself is an “artistic decision—one that

include, but are not limited to designers, assistant designers, programmers, suppliers, engineers, and data analysts. *Id.* at 692.

¹⁶⁹ *Id.* at 693.

¹⁷⁰ See generally *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982).

¹⁷¹ Rosen, *supra* note 165, at 803.

¹⁷² See *supra* notes 56–59 and accompanying text.

¹⁷³ Rosen, *supra* note 171, at 803–04.

¹⁷⁴ *Id.*

¹⁷⁵ Compare *id.*, with *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 61 (1884); *supra* text accompanying notes 55–56.

is no less deserving of copyright protection in principle or in conformity with the Act.”¹⁷⁶ While this Note argues that the fashion brand, not the programmer of the AI device, should be awarded the copyrights for AI-generated designs, Rosen’s arguments are still helpful because they include programmer “artists” within the scope of people deserving copyrights.¹⁷⁷ At the end of the day, fashion designers are artists in their own way.¹⁷⁸

In *Stern Electronics, Inc. v. Kaufman*, Stern Electronics manufactured audiovisual displays for video games generated by the plaintiff’s computer program.¹⁷⁹ Later, Stern Electronics sued another video game manufacturer for creating similar audiovisual displays.¹⁸⁰ Stern Electronics held copyrights on both the computer programs and the audiovisual displays generated by the programs, but the other manufacturer contended that only the written computer program was copyrightable.¹⁸¹ To support this argument, the manufacturer posited that the nature of a video game’s audiovisual displays—changing based on how the game is played—makes the images unfixed.¹⁸² The Second Circuit denied these copyright objections for two principal reasons: first, the audiovisual displays were fixed in a tangible medium; and second, they were original works.¹⁸³

¹⁷⁶ See Rosen, *supra* note 171, at 803–04.

¹⁷⁷ *Id.*

¹⁷⁸ Visual artists use paint and other materials to express themselves and their surroundings on canvases, sculptures and other media; contrarily, fashion designers use threads and other materials to express themselves and their surroundings on clothing and accessories. The Metropolitan Museum of Art has even displayed clothing and design sketches created by great designers, such as Gianni Versace, John Galiano and Dolce & Gabbana, in the 2018 *Heavenly Bodies: Fashion and the Catholic Imagination* exhibit and the 2019 *Camp: Notes on Fashion* exhibit. See, e.g., *Select Images: Art and Fashion Objects*, METROPOLITAN MUSEUM ART, <https://www.metmuseum.org/exhibitions/listings/2018/heavenly-bodies/art-and-fashion-images> [https://perma.cc/37T9-2N5C]; *Camp: Notes on Fashion*, METROPOLITAN MUSEUM ART, <https://www.metmuseum.org/exhibitions/listings/2019/camp-notes-on-fashion> [https://perma.cc/Y4MM-KLEG]. These exhibits support the notion that fashion designs and clothing are works of art created by artists.

¹⁷⁹ *Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852, 854 (2d Cir. 1982).

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at 855.

¹⁸² See *id.* at 856.

¹⁸³ *Id.*

As to the “fixed in a tangible medium” requirement of U.S. copyright law, the Second Circuit acknowledged that each time a user launches the video game in question, the outcome of the game will be slightly different depending on the way that the game is played.¹⁸⁴ While the court gave merit to the notion that the many possible outputs within the game raises concerns for the necessary “fixed” quality of copyrighted works, it ultimately rejected this claim because it determined that as long as players succeed in the game, the same images are recreated and in that sense the audiovisual display remains fixed.¹⁸⁵ The court further explained that the “[t]he repetitive sequence of a substantial portion of the sights and sounds of the game qualifies for copyright protection as an audiovisual work.”¹⁸⁶

The Second Circuit explained that the creative process involved in programming the computer to display such images gave the programmer a copyright in the work that the computer program generated.¹⁸⁷ The court further rejected all arguments by the defendant claiming that the audiovisual displays lacked originality as required by the Copyright Act.¹⁸⁸ Finally, when summarizing its holding on the copyright issues in this case, the Second Circuit described how the audiovisual displays were original:

Someone first conceived what the audiovisual display would look like and sound like. Originality occurred at that point. Then the program was written. Finally, the program was imprinted into the memory devices so that, in operation with the components of the game, the sights and sounds could be seen and heard. The resulting display satisfies the requirement of an original work.¹⁸⁹

Andrew J. Wu, an associate in the Patent & Antitrust Group at Sidley & Austin LLP, wrote an article advocating that “users should

¹⁸⁴ *Id.* (providing examples of what happens when a “player’s spaceship is destroyed before the entire course is traversed”).

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *See id.*

¹⁸⁹ *Id.* at 856–57.

be awarded copyrights to computer-generated works even if they are not the ‘originators’ of the work.”¹⁹⁰ As previously discussed, end users are clients of the programmers.¹⁹¹ In the fashion context, end users can be seen as the designers or even fashion brands if the brands own the works created by designers at their company. Wu arrived at this conclusion by positing a hypothetical¹⁹²: the programmer and the user have some type of contractual agreement whereby the programmer gives rights to the user, and the user is encouraged to buy or license the AI device from the programmer.¹⁹³ Wu further argued that because users decide whether or not to even create the output or to ultimately release the work to the public, “the user should be given [an] incentive for creativity.”¹⁹⁴

Wu is not the only one to think of AI-generated creations this way.¹⁹⁵ Ariele Elia,¹⁹⁶ former Industry and Project Coordinator at FIT and Assistant Director of the Fashion Law Institute, has opined that when it comes to digital models, there are already agreements in place between software companies and end users that set the general rights for end users.¹⁹⁷ For example, DAZ Productions, Inc. has a standard “End User License Agreement,” which states that any licensee of its 3D-animation software will own the rights to what the software produces.¹⁹⁸ If agreements can be enforced for digital models, they should be enforced for end users as well, such as fashion designers or brands that purchase a license to use an AI device. But even if a federal court determined that human involvement and user-programmer agreements nonetheless do not warrant

¹⁹⁰ Wu, *supra* note 157, at 162.

¹⁹¹ Greene & Longobucco, *supra* note 1.

¹⁹² Wu, *supra* note 157, at 162.

¹⁹³ *Id.*

¹⁹⁴ *Id.* at 162–63 (explaining that the desire to create is a main purpose in U.S. copyright law and citing U.S. CONST. art. I, § 8, cl. 8).

¹⁹⁵ See Ariele Elia, *The Rise of Computer Generated Fashion Models and Their Rights* (unpublished manuscript) (on file with author).

¹⁹⁶ *Faculty*, FIT St. U. N.Y., <http://www.fitnyc.edu/fashion-design-mfa/faculty/index.php> [<https://perma.cc/9CMU-527R>]; see also Ariele Elia, LINKEDIN, <https://www.linkedin.com/in/ariele-elia-b4994871> (last visited Jan. 23, 2020).

¹⁹⁷ Elia, *supra* note 195, at 10.

¹⁹⁸ *End User License Agreement*, DAZ3D, <https://www.daz3d.com/eula> [<https://perma.cc/EQ98-CE5W>].

copyright protection for AI-created designs, another argument supports awarding such protection: the work-for-hire analogy.¹⁹⁹

C. The Work-for-Hire Analogy

Using *Naruto* to claim that a designer cannot be awarded copyright protection for his or her designs created by AI would generally make such designs available in the public domain.²⁰⁰ However, work-for-hire arrangements are an exception to this general rule.²⁰¹ A work-for-hire (also known as a “work made for hire”) is “a work prepared by an employee within the scope of his or her employment; . . . or a work specially ordered or commissioned for use as a . . . compilation”²⁰²

In a typical work-for-hire arrangement in the United States, the employer of the author, not the author herself, would get copyright protection for whatever the author creates.²⁰³ This Note argues that

¹⁹⁹ Long, *supra* note 152.

²⁰⁰ *Id.*

²⁰¹ Yanisky-Ravid, *supra* note 168, at 708.

²⁰² Copyright Act of 1976, 17 U.S.C. § 101(a) (2018). The complete definition of a “work-for-hire” under the statute is:

A “work made for hire” is —

(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire. For the purpose of the foregoing sentence, a “supplementary work” is a work prepared for publication as a secondary adjunct to a work by another author for the purpose of introducing, concluding, illustrating, explaining, revising, commenting upon, or assisting in the use of the other work, such as forewords, afterwords, pictorial illustrations, maps, charts, tables, editorial notes, musical arrangements, answer material for tests, bibliographies, appendixes, and indexes, and an ‘instructional text’ is a literary, pictorial, or graphical work prepared for publication and with the purpose of use in systematic instructional activities.

Id.

²⁰³ Long, *supra* note 152, at 708–09; *see also* U.S. COPYRIGHT OFF., CIRCULAR 9: WORKS MADE FOR HIRE 1 (Sept. 2012), <https://www.copyright.gov/circs/circ09.pdf> [<https://perma.cc/T5HA-FJ7W>] (stating that “[i]f a work is made for hire, an employer is

an AI device or program is an “employee” of its designer or brand, and thus the designer or brand is entitled to copyright protection for the creations of the AI device. Further, a compilation can qualify as a work-for-hire.²⁰⁴ Accordingly, a fashion designer’s AI-assisted arrangement for a particular item could be considered a compilation, and, therefore, copyrightable under the work-for-hire doctrine. AI programmers collect and assemble preexisting materials (including designs from past collections, colors, and other data) based on what the designer or brand suggests, and arrange the materials in such a way that the AI program creates a work.²⁰⁵ This Note suggests that this work as a whole should thus be considered an original work of authorship entitled to copyright protection assigned to the brand or designer.

Based on the work-for-hire doctrine in the United States, fashion designers and brands being awarded copyrights for AI-generated designs seems appropriate.²⁰⁶ The United Kingdom (“UK”), on the other hand, has taken a different approach to protecting AI-generated designs in the Copyright, Designs and Patents Act of 1988 (the “CDPA”).²⁰⁷ The CDPA was enacted at a time when creations were the result of a direct relationship between the input to a program and the output that the program produced.²⁰⁸ Thus, it is

considered the author even if an employee actually created the work. The employer can be a firm, an organization, or an individual.”). The Copyright Act of 1976 further explains, that “[i]n the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright.” 17 U.S.C. § 201(b).

²⁰⁴ Under the Copyright Act of 1976, “compilation” is defined as a work “formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in a such a way that the resulting work as a whole constitutes an original work of authorship.” 17 U.S.C. § 101.

²⁰⁵ Greene & Longobucco, *supra* note 1; *see also supra* Schlackman, note 22.

²⁰⁶ *See supra* text accompanying notes 203–05.

²⁰⁷ Copyright, Designs and Patents Act 1988 (“CDPA”), c.48 (UK), *available at* <http://www.legislation.gov.uk/ukpga/1988/48/contents> [<https://perma.cc/Z95S-DQRX>] [hereinafter “CDPA”]. “In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.” *Id.* at § 9(3).

²⁰⁸ Thomas Macaulay, *Legal Issues Around IP for AI: Who Owns the Copyright on Content Created by Machines?*, TECHWORLD (Jan. 26, 2018), <https://www.techworld.com/>

uncertain whether this law will extend to AI-generated creations where there is more of an indirect relationship to end users (i.e., fashion designers who purchase AI devices and are not directly inputting information themselves).²⁰⁹

The CDPA specifically extended copyright protection to computer-generated works, unlike the United States, which currently does not mention computer-generated works in its statutes.²¹⁰ Unfortunately, the CDPA was not specific in defining ownership parameters for computer-generated works. On one hand, the UK's current law may be interpreted to mean that the AI software's programmer would be the owner of the AI-created designs because the programmer may be considered the one who made "the arrangements necessary for the creation of that work."²¹¹ On the other hand, a fashion designer might be considered the one to have made the arrangements necessary because without the designer ordering the AI device, instructing the programmer which data to input, and then using the AI's generated designs to create the final work sold to consumers, the "creation of [that] work" could not be generated.²¹² It would be detrimental to the fashion industry to consider the programmer the owner of the AI-created designs, however, because designers who use AI as part of their design process could then be at risk when it comes to owning their original designs that they simply paid an AI programmer to create.²¹³

This programmer-favored interpretation may never be realized in court;²¹⁴ but if it is, one best practice to eliminate this risk entails fashion designers creating a written contract with AI vendors and programmers.²¹⁵ The contract should include provisions that make

data/government-could-take-control-of-data-ethics-in-draft-data-protection-bill-3670556/
[<https://perma.cc/R58P-ZMRN>].

²⁰⁹ *Id.*

²¹⁰ Compare CDPA *supra* note 207, at § 9(3), with Compendium, *supra* note 95; see also *supra* Part I.C.

²¹¹ Greene & Longobucco, *supra* note 1; see also CDPA, *supra* note 207, at § 9(3).

²¹² CDPA, *supra* note 207, at § 9(3).

²¹³ Greene & Longobucco, *supra* note 1.

²¹⁴ Macaulay, *supra* note 208 (claiming that in the UK, the legislation is there to justify intellectual property rights for end users of AI devices).

²¹⁵ *Id.*; see also Telephone Interview with Aleksandr Nazarov, Coordinator of Student Contests and Industry-Sponsored Projects, FIT (Mar. 15, 2019) (while the specifics of the

it clear that all rights attached to whatever copyrightable designs created with the assistance or involvement of AI are solely owned by the client (i.e., the fashion house or independent designer), not the AI vendor.²¹⁶ The contract should also feature a provision that explains that even if the designs are not copyrightable, the vendor must permit the client to use the AI-generated work.²¹⁷

Regardless of whether the UK awards intellectual property rights to the end user or to the programmer, the United States must then follow the UK's decision because both countries are parties to the Berne Convention.²¹⁸ The Berne Convention states that if a copyright exists in a member country, then this copyright is valid in all member countries who are signatories.²¹⁹ Because the UK and the United States are both signatories of the Berne Convention,²²⁰ the United States will have to honor rulings in favor of the designer if UK law is interpreted by courts to permit copyrights to fashion designers who use AI devices to create designs.²²¹

contracts involved in setting up the Tommy Hilfiger FIT collaboration were unavailable, Nazarov said that when doing collaborations and contests with students and third parties, FIT “makes very clear to any sponsor that the students own everything [including their copyrights], and if [the students] don’t [own everything], the sponsor will have to pay the students the professional price or industry rate.”). This conversation suggests that in the event that students, as designers, work with third parties using the assistance of AI, the students will contractually own the copyrights to their designs; *see also* Interview with Catherine Malkova, Global Account Partner in Life Sciences Industry, IBM (Malkova explained: “In general, IP ownership for the [final products] . . . belong to the client. Any pre-existing ‘know-how’/assets/techniques [are] usually owned by the technology provider.”).

²¹⁶ Macaulay, *supra* note 208.

²¹⁷ *Id.*

²¹⁸ *Countries Berne Convention*, COPYRIGHT HOUSE, <https://copyrighthouse.org/countries-berne-convention> [<https://perma.cc/WJD7-N5M9>].

²¹⁹ *See id.* (listing all 177 signatories out of 195 countries).

²²⁰ The UK signed the Berne Convention in 1886 and the United States signed in 1988. *Fact Sheet P-08: The Berne Convention*, UK COPYRIGHT SERVICES (Dec. 6, 2011), https://www.copyrightservice.co.uk/copyright/p08_berne_convention [<https://perma.cc/YL7N-DV53>]; *see also Berne Notification No. 121: Berne Convention for the Protection of Literary and Artistic Works Accession by the United States of America*, WORLD INTEL. PROP. ORG., https://www.wipo.int/treaties/en/notifications/berne/treaty_berne_121.html [<https://perma.cc/4W3E-G5XN>].

²²¹ *See supra* note 219 and accompanying text.

Professor Jack Balkin also supports using the work-for-hire analogy for AI-created designs.²²² Balkin claims that for a work-for-hire relationship to exist, operators of AI systems must exhibit special duties of good faith and fair dealing toward their clients.²²³ Moreover, Balkin reasons that privately owned businesses who are not direct fiduciaries will still have duties toward the general public.²²⁴ Balkin's requisite responsibilities and duties are exactly why AI-generated works should be protected under the work-for-hire doctrine.²²⁵ Balkin cautions readers to avoid confusing AI acting as a *partial* substitute with AI acting as a human replacement, because the latter scenario is when issues of liability arise.²²⁶ Balkin defines this act of treating AI devices as though they have human rights as the "substitution effect."²²⁷ The substitution effect is the idea that despite AI being capable of making *some* human decisions faster than humans, being a "substitute" for a human also means that AI is deficient in other ways.²²⁸ For example, AI devices are unable to make common sense judgments.²²⁹ Moreover, it is impossible for AI devices to be responsible for their actions—they are inanimate objects.²³⁰

Considering an AI device as an employee of a fashion designer relieves the fear of being unable to hold such an inanimate object liable to consumers for injuries.²³¹ Such fears come into play when attempting to hold employers liable for their employees' actions. In

²²² Yanisky-Ravid, *supra* note 168, at 707.

²²³ *Id.*

²²⁴ *Id.* at 708.

²²⁵ If a work and working relationship fall within the work-for-hire doctrine, there is no question of who is responsible as it is known that liability rests with the employer. *Id.* at 711.

²²⁶ For example, if an AI device is treated as a human because it makes design decisions, then it creates an item of children's clothing full of spikes in violation of clothing regulations, these spikes injure a child, and now the child or the child's parents need to hold someone accountable, who would be the defendant? See Ian Kerr, *AI as Substitute Decision Makers*, BALKINIZATION (Nov. 1, 2018), <https://balkin.blogspot.com/2018/11/ais-as-substitute-decision-makers.html> [<https://perma.cc/528A-6MRB>]; see also Jack M. Balkin, *The Three Laws of Robotics in the Age of Big Data*, 78 OHIO ST. L.J., 1217 (2017).

²²⁷ Balkin, *supra* note 226, at 1224.

²²⁸ *Id.* at 1224–25.

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ See *id.*; see also Yanisky-Ravid, *supra* note 168, at 711.

Community for Creative Non-Violence v. Reid, a copyright infringement case, the United States Supreme Court determined that the law governing and defining an “employer-employee” relationship is derived from common law of agency principles.²³² This relation to agency law is consistent with the concept that an employer at fault would have the liability for infringements or harms caused by an employee’s work, just as a principal might be held responsible for its agent’s fault under the common-law doctrine of *respondeat superior*.²³³ Such an employer-employee relationship is found when there is: (1) control by the employer over the work (i.e., how, where, and by what means the work is done); (2) control by the employer over the employee (i.e., how long the job takes, what the job duties are, and what responsibilities the potential employee has); and (3) status and conduct of the employer (i.e., the business that the employer is working in compared to what the potential employee will be doing).²³⁴

The analogy to the work-for-hire doctrine is useful for examining the relationship between AI devices and the fashion designers that use them to produce designs because this relationship parallels an agency relationship between employees and employers. The Copyright Act deemed employers and contractors, rather than employees and subcontractors, the authors of a work “to incentivize the employer or primary contractor at whose instance, direction, use, commercial purposes or risk the work is prepared, as well as to give them control over the commercial force regarding the work.”²³⁵ Likewise, a designer who purchases or rents an AI device by contracting with an AI programmer should be considered an author to incentivize the designer at whose instance, direction, use, commercial purposes, or risk the work is prepared.

Applying the previously mentioned factors,²³⁶ the AI device is purchased by a designer or fashion brand and that designer or fashion brand has control over how the AI will produce work, where the AI will produce its work, and which designs will be accepted or

²³² *Comty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 751–52 (1989).

²³³ Yanisky-Ravid, *supra* note 168, at 710.

²³⁴ *Id.*

²³⁵ *Id.* at 711.

²³⁶ *See supra* notes 232–35 and accompanying text.

rejected for final production.²³⁷ Similar to how an employee fixes its copyrightable work in a tangible medium of expression in a work made for hire relationship, AI merely acts as the means to fix a compilation of ideas in a tangible medium of expression.²³⁸ Thus, in a work made for hire, the employer is considered the author of the work.²³⁹

The work-for-hire analogy not only makes sense for contractual and practical ease, but also for societal ease. From a public policy standpoint, an AI programmer is guaranteed monetary gain from the price that it sets for licensing or purchasing the AI device which it programmed.²⁴⁰ Logistically speaking, the user plays the biggest role in the fashion design process, ranging from deciding which instructions get programmed into the AI to inspecting the quality of the final product.²⁴¹ The AI adheres to the user's instructions and merely reveals the final product in a fixed medium of expression before the user analyzes the quality of the product.²⁴² Professor Pamela Samuelson²⁴³ used the example of computer-generated architectural designs to explain why designers should be considered authors and thus afforded copyright protection.²⁴⁴ Professor Samuelson's analogy demonstrates why designs should be the subject of a work-for-hire contract, with the designer and the programmer as the signing parties.²⁴⁵ Samuelson treats the computer as if it

²³⁷ Greene & Longobucco, *supra* note 1. The control element of this relationship comes from the communication between the designer and the programmer where the designer provides its limiting instructions to the programmer. *Id.*

²³⁸ Wu, *supra* note 157, at 165.

²³⁹ *Id.* (emphasizing that “the employer is considered the author of the work, because the employer is the ‘motivating factor in producing the work’”).

²⁴⁰ Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185, 1203 (1986).

²⁴¹ *Id.* at 1204.

²⁴² *See id.*

²⁴³ *Id.* at 1185.

²⁴⁴ *Id.* at 1203–04.

²⁴⁵ *See id.* at 1204 (suggesting that an “[end] user may use a program for functions that are beyond the programmer’s expertise. For example, a programmer may have worked with an experienced architect (or group of architects) to develop a program capable of generating architectural plans. The programmer himself may not be an architect, and may not be able to utilize his own program to create a comparable architectural design that an experienced architect using the program could develop with its aid.”).

is an employee or independent contractor working *with* the designer; thus, without the designer, there would be no quality design.²⁴⁶

D. What Happens to the Fashion Industry If AI-Generated Designs Are Copyrightable?

Neither *Naruto* nor the work-for-hire analogy adequately addresses the issue of what happens if AI-generated designs are copyrightable.²⁴⁷ This issue is presented not only when independent designers use AI to create new designs, but also when they use AI to create new designs based off of the collections of others.²⁴⁸ For example, Robbie Barrat is an artist who works with AI in a research lab.²⁴⁹ Barrat created an entire AI-assisted collection based on past collections of the luxury brand Balenciaga.²⁵⁰ Barrat fed the AI device Balenciaga's lookbooks,²⁵¹ advertisements, runway shows, and its online catalog spanning the previous two months.²⁵² Barrat then used this data to train the AI device, pix2pix neural net.²⁵³ While there are defects in the program, like creating designs on

²⁴⁶ *Id.* at 1204 (using an example of computer-generated music).

[A] programmer may have studied musical theory and written a program that *generates* very fine musical compositions, the programmer himself may not, *in fact*, be able to assess accurately which of the pieces *generated* by the program are musically superior to the others, or which parts of the raw output are better than other parts, let alone what to do to fix the parts that are not very good. It may be that an experienced composer must use the program *in order* to create the quality of music that the programmer had hoped for.

Id.

²⁴⁷ See generally *supra* Parts II.A, II.C for discussions on how using each analogy does not fully answer the AI-generated fashion design copyrightability question.

²⁴⁸ Balkin, *supra* note 226, at 1225, 1234.

²⁴⁹ Robbie Barrat (@DrBeef), TWITTER, https://twitter.com/DrBeef_ [<https://perma.cc/7LLN-VWTR>].

²⁵⁰ Katharine Schwab, *This AI Designs Balenciaga Better than Balenciaga*, FAST CO. (Aug. 22, 2018), <https://www.fastcompany.com/90223486/this-ai-designs-balenciaga-better-than-balenciaga> [<https://perma.cc/7T2A-FX58>].

²⁵¹ *Lookbook*, LEXICO, <https://en.oxforddictionaries.com/definition/lookbook> [<https://perma.cc/2ZPP-2KEX>] (defining “lookbook” as “[a] set of photographs displaying a fashion designer’s new collection, assembled for marketing purposes”).

²⁵² Schwab, *supra* note 250.

²⁵³ *Id.*

limbless models, Barrat appreciated the inspiration the program provided and the unique quality of the asymmetrical items of clothing the AI generated, which reflected a lack of human perception.²⁵⁴

Despite the fact that AI may be inspiring young designers like Barrat, if these computer-generated works are copyrightable, there is concern about whether these “innovators” are infringing on the luxury brand’s past designs that form the basis of the young designer’s work.²⁵⁵ Conversely, one could argue that this is just what fashion is all about, in the sense that Barrat is doing what many fledgling designers have done in the past by using images of prior collections that appeal to them and incorporating these collections into their new designs.²⁵⁶

As previously mentioned, despite U.S. copyright law not formally protecting fashion designs, designers can still find some protection through copyright law.²⁵⁷ Using Barrat’s process as an example, the Balenciaga images fed into the AI would have been copyrightable designs.²⁵⁸ There could be an issue if Barrat’s AI-generated compilation of designs end up being copyrightable, with

²⁵⁴ *Id.* (expressing that “because it’s not constrained by human taste, style, and history, the AI comes up with designs that may never occur to a person”).

²⁵⁵ Arielle Pardes, *AI’s Latest Job? Designing Cool T-Shirts*, WIRED (July 11, 2019), <https://www.wired.com/story/artificial-intelligence-in-fashion-design/> [<https://perma.cc/3UNL-AC9P>] (promoting AI-generated and AI-assisted fashion designs due to the innovation that it generates, while also acknowledging that AI projects by Cross & Freckle, Glitch or other fashion companies “offers a glimpse into the nascent world of AI-generated fashion, where designers use machine-learning models to remix and riff on old designs”); see also Valentina Mazza, *Artificial Intelligence and Fashion: Between Innovation and Creativity*, LEXOLOGY (Nov. 16, 2018), <https://www.lexology.com/library/detail.aspx?g=12304e5f-33db-4615-998c-1b27b17e3427> [<https://perma.cc/B8V5-YQZ3>].

²⁵⁶ See Schwab, *supra* note 250, at 3; see also text accompanying *supra* notes 234–38; see also Joyshree Baruah, *Some Controversial High-Profile Instances of Design Copy*, ECON. TIMES (Feb. 25, 2018), <https://economictimes.indiatimes.com/magazines/panache/some-controversial-high-profile-instances-of-design-copy/articleshow/63059688.cms> [<https://perma.cc/S3LY-Z8T6>] (illustrating how many designers such as Zara, Mango, and even Chanel have crossed the line from inspiration to copying); Gemma Rowley, *Inspiration or Stealing: The Fashion War On Design ‘Copies’*, FASHION INDUSTRY BROADCAST (June 13, 2017), <https://fashionindustrybroadcast.com/2017/06/13/inspiration-or-stealing-the-fashion-war-on-design-copies/> [<https://perma.cc/UBD8-MTTC>].

²⁵⁷ See 17 U.S.C. § 102; see also *supra* text accompanying notes 35–36 (discussing case law where cheerleading uniform designs were held copyrightable).

²⁵⁸ See *supra* text accompanying notes 39–40.

such rights belonging to Barrat.²⁵⁹ For example, what does such copyright assignment and ownership mean for the underlying designs that were fed into the AI device and the copyright owners of those underlying designs?

In terms of ethics, it seems improper for someone like Barrat to be able to profit from designs solely based off of the copyrightable material of another designer, without the original designer's permission.²⁶⁰ Additionally, using AI as Barrat did raises a policy concern: if young designers can profit off of their AI-generated designs created from the input of other designers' collections, and gain copyright protection over these AI-generated designs, what is the incentive for creating the underlying designs in the first instance? Balenciaga, as a luxury brand, may have the financial and social power to keep creating, even despite arguable "infringement" via AI repurposing. But what about fashion brands that do not have the same financial backing or manpower as Balenciaga that fall victim to other designers feeding their pieces into AI devices? These designers who lack the power held by bigger luxury brands might be disincentivized to keep creating when their designs will just be used to feed an AI device in order to create something more cutting-edge, more robust, more improved, and, most importantly, possibly copyrighted in somebody else's name.

III. SOLUTION

Although this Note discusses the overall issue of whether AI-created designs should be copyrightable, that issue must overcome a two-stage hurdle to get answered in the first place. The first hurdle, as discussed in Part I, is the fact that there is currently little copyright protection for fashion designs in the United States. The second hurdle, as discussed in Part II, is how—even if such protection were eventually expanded to fashion designs—the little copyright protection that may exist would still give rise to the issue of copyrightable AI-generated designs.

²⁵⁹ Cf. Greene & Longobucco, *supra* note 1 (suggesting that despite the issues in authorship, AI may be used to help fight the copyright infringement battles within the fashion industry).

²⁶⁰ See Bradley, *supra* note 93; see also Baruah, *supra* note 256.

Under the interpretation of the Ninth Circuit's decision in *Naruto*, computer-generated works could be deemed public domain.²⁶¹ If the United States does not follow the UK's lead by giving companies and designers genuine intellectual property protection, many issues could arise.²⁶² For example, releasing the designs into the public domain could limit programmers and owners of AI devices' enthusiasm to utilize AI devices.²⁶³ Further, circulating such AI-assisted and AI-generated designs into the general population could decrease the value of these new designs.²⁶⁴ Such a decrease in value for fashion designs could subsequently limit society's ability to continue down its path of artistic innovation in the fashion industry.²⁶⁵

Furthermore, if AI-generated designs are deemed to be public domain, AI devices cannot sue.²⁶⁶ Because AI devices cannot sue, this also means that they cannot be sued.²⁶⁷ If AI creates a work that infringes upon the work of another designer, there should be someone responsible and held liable for this infringing work, rather than relying on public domain to absolve all parties of liability. Even if the AI device could not be held liable under *Naruto*, the designer or brand that releases the final product to the public and into the stream of commerce should be liable for this infringement.²⁶⁸ To illustrate, if there is a product defect or a design that is offensive in some way, consumers and the public will want to confront the entity making money off the creations.²⁶⁹ This entity would be the fashion designer or brand, not the AI device itself, as these inanimate objects cannot profit off of designs.

Beyond liability for potential issues that may arise from AI ownership, the "uncanny valley" theory hypothesized by Dr.

²⁶¹ See Long, *supra* note 152.

²⁶² Hristov, *supra* note 155, at 438.

²⁶³ *Id.*

²⁶⁴ *Id.*

²⁶⁵ *Id.*

²⁶⁶ Mazza, *supra* note 255.

²⁶⁷ *Id.*

²⁶⁸ Samuelson, *supra* note 240, at 1203.

²⁶⁹ Restatement (Second) of Torts § 402A (Am. Law Inst. 1965).

Masahiro Mori also supports this Note's anti-AI-ownership conclusion.²⁷⁰ The uncanny valley theory holds that as computer devices move beyond following instruction, to being able to do more on their own (i.e., designing a collection of clothing by playing the human role of design assistant), there becomes a point when humans no longer view such creations as exciting and their interest turns into "repulsion."²⁷¹ This theory raises a problem that policy-makers might encounter with granting copyrights to an AI device—does society *really* want an AI device to be able to retain ownership of a right customarily granted to human beings?

Social implications aside, comparing AI-generated designs to monkey-created selfies still fails to make sense. As mentioned, monkeys are not manmade like AI devices. Monkeys are also not human-programmed like AI devices.²⁷² The fact that AI currently uses human-generated teaching techniques to learn how to create original works of art, and the fact that what is in their "lessons" (the database created by humans) is completely at the discretion of the human being that is using the AI,²⁷³ means that there is much more human involvement in AI-generated works than animal-generated works of art.

This Note argues against using *Naruto* as an analogy to conclude that AI-generated works are not copyrightable and thus cannot be

²⁷⁰ See Marisa Brook, *A Walk in the Valley of the Uncanny*, DAMN INTERESTING (May 24, 2007), <http://www.damninteresting.com/a-walk-in-the-valley-of-the-uncanny> [<https://perma.cc/UBD8-MTTC>]; see also Masahiro Mori, *The Uncanny Valley*, 7 ENERGY 1, 33 (1970), translated in 19 IEEE ROBOTICS & AUTOMATION MAG., June 6, 2012, at 98 (Karl F. MacDorman & Norri Kageki trans.), available at <http://spectrum.ieee.org/automaton/robotics/humanoids/the-uncanny-valley> [<https://perma.cc/UT2L-WPCT>].

²⁷¹ See Brook, *supra* note 270; see also Mori, *supra* note 270.

²⁷² See *supra* notes 143–45 and accompanying text (examining the differences between AI devices and monkeys).

²⁷³ Nezami, *supra* note 3; see also The Ins and Outs of Copyright and AI, *supra* note 6. The panel shared a video showing the behind-the-scenes of researchers, almost 400 years later, create the "next" painting of Rembrandt Van Rijn. *Id.* The Directors of Technology for the Museum explain that they had to forego numerous steps to create "the next Rembrandt" including: (1) studying Rembrandt's past paintings to gather the data necessary, (2) determining the subject of the majority of the paintings, (3) because Rembrandt painted portraits, generating features of the face into another data base, then (4) bringing it to life using algorithms to align points in the face and a height map to create the texture of typical Rembrandt paintings, with the help of AI. *Id.* Essentially, three out of the four steps involved humans working diligently to create this work. *Id.*

owned by end users. This Note cautions against such an analogy because there is too much human interaction²⁷⁴ involved in the designs which a designer actually releases to the public and would want to be copyrighted that the *Naruto* court never even considered or mentioned in its decision. Rather than rely on the animal-created analogy developed by *Naruto*, courts and regulators posed with this question should instead compare the AI-created copyright issue to the aforementioned photography cases.²⁷⁵

Analogizing the photography cases of *Burrow-Giles*, *Lindsay*, and *Andrien*, fashion designers using AI devices would be using the AI merely as a tool to create desired designs: a tool that transforms ideas into tangible creations.²⁷⁶ In the AI design-creation process, the designer performs similar work to the plaintiffs in *Burrow-Giles*, *Lindsay*, and *Andrien*: giving specific, detailed instructions to people (AI programmers) or mechanisms (the AI device itself) by deciding exactly what goes into the AI's database.²⁷⁷ Using the courts' language in the above-referenced cases, the designer would be the owner of the AI-generated designs because the designer would be considered the "author" of the designs.²⁷⁸ The designer is the author because she translates the ideas of a collection that she envisioned into a fixed, tangible expression using the assistance of the AI device either as a tool or as a design assistant.²⁷⁹ Additionally, the designer or brand is the one responsible for most immediately and directly generating the fashion designs.²⁸⁰

It would not make sense for the AI programmer to be considered the owner of the AI-generated designs because, similarly to the printing company in *Andrien*, AI programmers do not, and are unlikely to, engage in activities that would constitute "intellectually modif[ying] or technically enhanc[ing] the concept articulated by"

²⁷⁴ Gershgorn, *supra* note 110 and accompanying text; *see also* Miller, *supra* note 113, at 1066–67.

²⁷⁵ *See supra* Part I.B.

²⁷⁶ *See supra* text accompanying notes 76–101.

²⁷⁷ *See supra* text accompanying notes 76–97.

²⁷⁸ *See supra* text accompanying notes 85–86, 178.

²⁷⁹ *See supra* text accompanying notes 176–78.

²⁸⁰ Samuelson, *supra* note 240, at 1202.

the fashion designers.²⁸¹ Nor would the AI programmers be changing the original expression of the designer or brand.²⁸² The AI programmers would merely be programming a device that arranges the designer's expression into a tangible form.²⁸³

Further, by examining the Second Circuit's analysis in *Stern Electronics, Inc. v. Kaufman*, one could conclude that using AI devices to help create fashion designs is similar to the process of producing video games.²⁸⁴ Like a video game company first conceiving the idea of a video game, the designer first conceives what the design would look and feel like when transferred to a fabric. According to the Second Circuit analysis, originality would occur at that point.²⁸⁵ Next, similar to the creation of a video game, the fashion-design program is written by the programmer who may be contracted by the designer.²⁸⁶ Finally, the program would be imprinted into the memory devices of the AI so that, in operation with the components of the design, the design could be seen in two-dimensional view and eventually three-dimensional view.²⁸⁷ Using the reasoning of the Second Circuit in *Stern Electronics*, the resulting fashion design is likely to satisfy the requirement of an original work.²⁸⁸

Additionally, this Note endorses the argument that the AI-generated fashion-design problem should be treated like a licensing or work-for-hire arrangement. If computer programmers design software and receive copyright protection in the program itself, and if they develop an AI machine that could convert a two-dimensional image to a three-dimensional image and receive patent protection for that algorithm, then the fashion designer or brand that purchases the AI device to use as a tool should receive copyright in all works

²⁸¹ *Andrien v. S. Ocean Cty. Chamber of Com.*, 927 F.2d 132, 135 (3d Cir. 1991); *see also supra* text accompanying notes 78–83.

²⁸² *See supra* text accompanying notes 83–84.

²⁸³ *Andrien*, 927 F.2d at 135; *see also supra* text accompanying notes 171–78.

²⁸⁴ *See generally Stern Electronics, Inc. v. Kaufman*, 669 F.2d 852 (2d Cir. 1982).

²⁸⁵ *Id.* at 856–57.

²⁸⁶ *Id.*

²⁸⁷ *See id.*

²⁸⁸ *Id.*; *see also supra* text accompanying note 189.

created with such AI device.²⁸⁹ From the fact that there appears to be a “human ingredient”²⁹⁰ involved in using AI to create fashion designs, the human authorship requirement of “*any* contribution by a human author” is met.²⁹¹ As mentioned in Part I.C. of this Note, CONTU even recognized that computer systems, like AI devices, cannot do anything without human involvement.²⁹²

Besides the multiple legal justifications for allowing the AI-generated designs to be copyrightable and owned by the fashion label or designer, there are a number of public benefits to legally denominating the fashion brands or designers as the owners of these AI-generated fashion-design copyrights.²⁹³ For starters, it is no secret that the fashion industry tends to underpay or not pay its young design interns.²⁹⁴ Giving rights to corporations, fashion

²⁸⁹ Raquel Acosta, *Artificial Intelligence and Authorship Rights*, JOLT DIG. (Feb. 17, 2012), <https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights> [<https://perma.cc/TP9N-HTC6>] (explaining that “were this not so, Microsoft could claim copyright in works produced on Word, Adobe in Photoshop, etc.,” which is not the case).

²⁹⁰ Miller, *supra* note 113, at 1069.

²⁹¹ See *supra* text accompanying notes 99–100; see also Compendium, *supra* note 95, at § 313.2.

²⁹² Miller, *supra* note 113, at 1069.

²⁹³ See *supra* text accompanying notes 229–30, 266–71.

²⁹⁴ Stefanie Marsh, *Chanel Shoes, But No Salary: How One Woman Exposed the Scandal of the French Fashion Industry*, GUARDIAN (Sept. 2, 2018, 10:00 AM), <https://www.theguardian.com/fashion/2018/sep/02/academic-exposing-ugly-reality-high-fashion-giulia-mensitieri> [<https://perma.cc/GVH9-A4JK>] (explaining how the fashion industry exploits its creatives); see also Aggie Toppins, *Designers, Please Pay Your Interns*, AIGA EYE ON DESIGN (Jan. 4, 2018), <https://eyeondesign.aiga.org/designers-please-pay-your-interns/> [<https://perma.cc/4LGY-K5G5>] (discussing how design interns are underpaid and that effects such a business structure has on the fashion industry as a whole). Notably, the underpaid intern problem goes beyond the fashion space; it is a nationwide problem related to employment law. See, e.g., Aziza Kasumov, *I Was Forever an Intern and This Is What I Learned*, VICE (Jan. 30, 2019), https://www.vice.com/en_us/article/9kpb58/job-internship-lessons [<https://perma.cc/5R7K-HMAB>] (providing testimony of a news media intern who stated that “internships foster[] inequalities between those who can afford to work for little or no pay and those who can’t [while] employers make you question your worth and accomplishments. Being paid little to nothing only perpetuates that feeling”); Moses Glickman, Josh Bochner & Audrey Cabay, *Despite Available Funding, Rice’s House Rep Crenshaw Won’t Pay Interns*, RICE THRESHER (Feb. 12, 2019), <https://www.ricethresher.org/article/2019/02/despite-available-funding-rices-house-rep-crenshaw-wont-pay-interns> [<https://perma.cc/BRF4-YUB3>] (discussing the financial strain on interns who work summer internships at Capitol Hill, but cannot afford to live in Washington D.C. throughout the summer).

houses, or independent designers will encourage the use of AI, thereby reducing the upfront costs of developing artistic talent and the time lag for producing a final product.²⁹⁵ For example, while a brand may need to scout and find talented young designers, create a strategy for a new collection, allow the artist to look at that brand's past styles and customer database, spend months designing the collection, operate a studio or place for the designs to be brought to life, and hire manufacturers to bring everything together in a collection, a brand could simply buy the AI device and supply the software programmer with all of the information that the AI needs to quickly create designs.²⁹⁶ With money saved in developing a collection, fashion houses or brands may be able to pay their designers, design assistants, and interns more money.

Conversely, one may argue that permitting copyrights under a low standard of human involvement may cause job-loss in the fashion industry.²⁹⁷ American industries in general will face more job losses the more that automation and AI become an integral part of society.²⁹⁸ Providing some context to a study generated by the McKinsey Global Institute, economics reporter Paul Davidson²⁹⁹ addressed the predicted job loss crisis surrounding automation and AI.³⁰⁰ The McKinsey study predicted that by 2030, thirty-nine to seventy-three million jobs could be destroyed in the United States due to technological advancements.³⁰¹ While the number seems large, it is somewhat overstated by the omission of the fact that about twenty million people working those jobs can be transitioned quite

²⁹⁵ Yanisky-Ravid, *supra* note 168, at 715.

²⁹⁶ *Id.* at 715–16.

²⁹⁷ Kyle Chayka, *Style Is an Algorithm: No One Is Original, Not Even You, Racked*, BUS. FASHION (Apr. 17, 2018), <https://www.businessoffashion.com/articles/news-analysis/how-algorithms-are-threatening-fashions-white-collar-jobs> [<https://perma.cc/GHZ3-447S>]; *see also* Eileen L. Wittig, *The Fashion House of Artificial Intelligence*, VALUE WALK (Mar. 23, 2017), <https://www.valuewalk.com/2017/03/fashion-house-artificial-intelligence/> [<https://perma.cc/BFN6-C6LC>]; Duong, *supra* note 117, at 87.

²⁹⁸ Paul Davidson, *Automation Could Kill 73 Million U.S. Jobs by 2030*, USA TODAY (Nov. 28, 2017), <https://www.usatoday.com/story/money/2017/11/29/automation-could-kill-73-million-u-s-jobs-2030/899878001/> [<https://perma.cc/N868-RL8V>].

²⁹⁹ Paul Davidson (@PDavidsonusat), TWITTER, <https://twitter.com/Pdavidsonusat> [<https://perma.cc/V6XP-SGC3>].

³⁰⁰ *See* Davidson, *supra* note 298.

³⁰¹ *Compare id.*, with Wittig, *supra* note 296.

easily into a similar job placement.³⁰² Notably, these studies are not industry-specific and instead provide a general prediction for both automation and AI.³⁰³

In the context of these AI-influenced industries, when solely looking at AI and its relationship to potential job loss, scholars and professionals in these industries are conflicted about their predictions.³⁰⁴ While pessimists like Kiran Garimella, Chief Scientist & Chief Technology Officer at KoreConX, predict that AI-related job loss will be detrimental to society,³⁰⁵ other scientists and thought-leaders predict “a huge increase in AI-related jobs to more or less compensate for the losses.”³⁰⁶

The concern over job loss has also been countered by the argument that even if some jobs are lost, industries within the creative realm—like the fashion industry—will not be harmed.³⁰⁷ Subscribers to this theory reason that the creative industries are the most adaptive and largest³⁰⁸ and therefore have the greatest resilience to bounce back.³⁰⁹ One may go as far as saying that a machine cannot replace human imagination in the first instance.³¹⁰

FIT, for example, has incorporated methods and course plans into their program to ensure that its students are prepared for a world where AI is an integral part of the fashion design process and the fashion industry as a whole.³¹¹ Michael Ferraro, Executive Director at FIT, admitted that FIT’s students were originally wary of the new AI-concentrated program at FIT; however, they evolved over time

³⁰² Davidson, *supra* note 297.

³⁰³ *Id.*

³⁰⁴ Kiran Garimella, *Job Loss From AI? There’s More to Fear!*, *FORBES* (Aug. 7, 2018), <https://www.forbes.com/sites/cognitiveworld/2018/08/07/job-loss-from-ai-theres-more-to-fear/#7656a0b223eb> [<https://perma.cc/KPA7-HX7K>].

³⁰⁵ Garimella claims that any pre-AI job positions will only limitedly be replenished by other jobs as has been seen throughout history. *Id.*

³⁰⁶ *Id.*

³⁰⁷ Wittig, *supra* note 296.

³⁰⁸ *Id.* (“[M]ore than any other industry, creative ones are both the most adaptive and the largest. There is no limit to creativity, even when AI is introduced as a competitor.”).

³⁰⁹ *Id.*

³¹⁰ *Id.* (“There is no limit to creativity, even when AI is introduced as a competitor.”).

³¹¹ Cadogan, *supra* note 4 (explaining that FIT wants to ensure that when its students graduate and are designing their own labels, they have the ability to adapt to the new market).

to realize the “power of these tools and how to apply them.”³¹² Ferraro discussed how the students’ feelings towards AI shifted from apprehension to excitement and such an evolution showed how adaptable designers can be to the world of AI.³¹³ The progression of today’s fashion students from designers who spend most of their time sewing to now spending much of their time soldering³¹⁴ demonstrates that whatever job loss is faced due to AI can be made up elsewhere if designers, stylists,³¹⁵ and manufacturers are willing to adapt.³¹⁶

Because of the human element involved and the policy concerns for creativity and encouraging innovation, this Note disputes the arguments that there is a lack of originality or fixation in AI-generated and AI-assisted designs. Ross J. Charap, Intellectual Property Partner at Ackerman LLP, articulated the “mere substitution and not replacement of humans” notion when he stated, “Kanye doesn’t even write music anymore, he considers himself to be an architect of music. What would an AI be but an architect of music[,

³¹² *Id.*

³¹³ *See id.* In an interview with *Dazed Digital*, Ferraro shared his excitement for how FIT students have been able to easily adapt to AI, stating “[i]t’s remarkable how quickly the students adapt, and how quickly they find ways to innovate their designs to create outstanding results.” *Id.*

³¹⁴ *Id.*; *see also Solder*, *supra* note 4 (defining “solder”).

³¹⁵ Because AI can now act in the role of a personal stylist by generating clothing options for a consumer based on a data network, current fashion stylists could adapt to an AI-influenced world by getting to know their clients more and providing a more personalized experience. For some people that level of human interaction is priceless. *See supra* text accompanying notes 109–10, 123–25; *see also Future of Fashion*, *supra* note 106.

³¹⁶ *Future of Fashion*, *supra* note 106. For example, students have already created backpacks for a high-end bicycle company with the help of AI technology. Cadogan, *supra* note 4. Further, Ferraro advised anyone who has a fear of losing their jobs as AI devices enter into the fashion industry:

Being agile and able to adapt and integrate change is the single most important skill you need to develop in confronting emerging technology. You have to be able to find a way of integrating it into your thought and creative processing so that you continue to add the value as the sense of being that you are and the creative force that you are. It’s all about leverage and making sure that you’re in control of it, rather than being a victim of it.

Id.

or of fashion]?”³¹⁷ If Charap’s question is posed to the federal circuit courts and the courts feel prevented from awarding copyright protection to designers because of a lack of originality, then the courts should, at the very least, adopt the test proposed by Law Professor Edward Lee.³¹⁸ If a design is produced using AI, it might still be considered “independently produced” in a way that required “the creative powers of the mind” due to the level of human involvement, and would thus satisfy Lee’s test.”³¹⁹

If the aforementioned loss of fashion jobs caused by the rise in AI-generated designs does in fact manifest itself, this problem could further be solved by the opening of jobs in other areas of the fashion industry and the possible creation of new types of jobs in the fashion industry. The potential for job loss weakly supports opponents of AI devices in the fashion industry because any of the aforementioned downsides are substantially outweighed by the benefits of copyright protection for AI-generated fashion designs.³²⁰ With the granting of copyright protection for AI-generated fashion designs, economic, social, and legal gaps can be filled in by society as a whole³²¹—for instance, the gaps in sustainable fashion when it comes to clothing waste,³²² the gaps in creativity caused by the human limitations of

³¹⁷ Ross J. Charap, Intellectual Property Partner, Ackerman LLP, Remarks at the Black Entertainment and Sports Lawyers Association (“BESLA”) Conference: Artificial Intelligence and Copyright Law: Examining the Challenges and Opportunities that AI Presents in the Entertainment Industry (Apr. 15, 2019).

³¹⁸ The test requires one to ask “whether the work in question (1) was independently produced, (2) in a way that required the creative powers of the mind and resulted in a creation that falls within the subject matter of copyright, and (3) possesses a modicum of creativity.” Lee, *supra* note 115, at 957; *see also supra* note 115 and accompanying text.

³¹⁹ *Id.* at 941.

³²⁰ *See supra* text accompanying notes 235, 240, 266–68.

³²¹ Yanisky-Ravid, *supra* note 168, at 716.

³²² *See, e.g.,* Rabe, *supra* note 120 (discussing the costly and wasteful return process for clothing items); *see also* Parent, *supra* note 126 and accompanying text; Jon Bird, *Fashion’s Dirty Little Secret And How It’s Coming Clean*, FORBES (Sept. 9, 2019), <https://www.forbes.com/sites/jonbird1/2018/09/09/fashions-dirty-little-secret-and-how-its-coming-clean/#2a4311871771> [<https://perma.cc/SZ9V-B5JT>] (shedding light on luxury brand, Burberry’s, practice of incinerating its unsold merchandise); Brooke Roberts-Islam, *Can Artificial Intelligence Combat Oversupply and Minimise Deadstock in Fashion?*, ECO-AGE (July 18, 2019), <https://eco-age.com/news/can-artificial-intelligence-combat-oversupply-and-minimise-deadstock-fashion> [<https://perma.cc/3JTD-JP5H>] (explaining how tailored clothing and customer service used by AI can decrease the waste that the fashion industry creates due to unsold merchandise).

excessive data absorption,³²³ and the gaps in existing copyright laws. Current worldwide copyright laws need to be amended to protect designers from the loss of profit and labor spent to create their collections when they use the assistance of AI devices.

CONCLUSION

Due to the current level of involvement by humans, fashion designs created by, or with the help of, AI should be considered copyrightable material and the property of the brand or designer that has purchased the AI.

As explained in Part II of this Note, comparing purposeful AI-generated fashion designs to accidental, wild-animal-generated photographs is not a strong analogy because there is much more human involvement and controlled factors involved when producing AI-generated fashion designs. Therefore, in a world where contracts govern most people's day-to-day lives and prevent confusion and uncertainty, courts should rely on the level of human involvement, user-programmer agreements, or employment agreements that explain work-for-hire relationships to determine copyrights for fashion designers. Permitting copyright ownership by fashion designers over AI-generated designs encourages designers to continue innovating and prevents the undesirable consumer and legal implications which result when copyrights are owned by AI or AI programmers.

Now that AI devices have the ability to generate creative works of art and design, it is time for the Copyright Act to expand its protections once again.³²⁴ This expansion should protect end users' copyrights over AI-generated designs by incorporating provisions

³²³ A person can only look at a limited number of catalogues, past designs, or art within a limited time. *Au contraire*, an AI device can intake excessive amounts of images in a short period of time and use these as "inspiration" for a new collection. See, e.g., The Ins and Outs of Copyright and AI, *supra* note 273 and accompanying text; see also *supra* notes 250–54.

³²⁴ In 1976, the Copyright Act was expanded to take into account technological advancements and the Berne Convention to bring the United States closer to its international counterparts. See *Copyright Timeline: A History of Copyright in the United States*, ASS'N RES. LIBR., <https://www.arl.org/copyright-timeline/> [<https://perma.cc/3VR8-57HM>]. U.S. copyright law's term of protection was extended to life of the author plus fifty years and unpublished works became copyrightable. See *id.*

that lay out how end users may establish copyrights over their AI-generated designs, in fashion and beyond. Laying such a framework will prepare humans for a potential future where AI starts making all of its own decisions and no longer requires any human involvement whatsoever. Such a framework is especially pertinent today, because as society continues to be faced with new types of artistic works created by machines rather than humans, there will be a greater demand for a legal framework to keep the human owners of these works, and the human consumers of the works, protected.