Burying the Black Box: AI Image Generation Platforms as Artists' Tools in the Age of *Google v. Oracle*

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I.   INTRODUCTION

When the Colorado State Fair's fine arts competition opened for entries, fantasy games designer Jason Allen submitted into the "digitally manipulated photography" category a piece he called "Théâtre D'opéra Spatial."[1] It was a rousing piece, to say the least, with a bold command of light, contrast, color, and detail, depicting a lavish futuristic pseudo-Victorian ballroom wherein figures dressed in finery observed a gaping portal to another fantastical world as if at a show.[2] It handily won first prize.[3] The crowd, however, was startled to learn that the art was largely the product of an artificial intelligence (AI) art generation platform called Midjourney, which Allen used to create the piece.[4] Allen attests that he spent many hours inputting the textual prompts that ultimately rendered the award-winning piece, claiming that his work was no less valid than anyone else's.[5] In response to his critics, Allen defied, "You said AI would never be as good as you, that AI would never do the work you do, and I said 'Oh really? How about this? I won.'"[6] Allen continued forebodingly, "[Artificial Intelligence Art Generating Tools are] here now. Recognize it. Stop denying the reality. AI isn't going away."[7]

Figure 1: Jason Allen's Award-Winning AI-Generated Image, "Théâtre D'opéra Spatial"

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1.   Drew Harwell, *He Used AI to Win a Fine-Arts Competition. Was it Cheating?*, WASH. POST (Sept. 2, 2022), https://www.washingtonpost.com/technology/2022/09/02/midjourney-artificial-intelligence-state-fair-colorado/ [https://perma.cc/F2JD-7HTE].

2.   *Id.*

3.   *Id.*; Kevin Roose, *An A.I.-Generated Picture Won an Art Prize. Artists Aren't Happy*, N.Y. TIMES (Sept. 2, 2022), https://www.nytimes.com/2022/09/02/technology/ai-artificial-intelligence-artists.html [https://perma.cc/82UJ-GTDW].

4.   *Id.*

5.   *Id.*

6.   Harwell, *supra* note 1.

7.   *Id.*

As AI art generation platforms become increasingly prolific, the truth of Allen's defiant warning rings louder and louder.[8] But what exactly are AI art generation platforms? Generally speaking, AI art generation platforms are machines that receive user input in the form of written text and produce images that match the user input.[9] For example, you could input text prompts such as "an oil painting of a corgi wearing a party hat," and the platform would generate one or several images to those specifications.[10] The internal mechanisms represent a black box, where the AI's method of processing data is so dynamic and complicated that it is presently impossible to model manually.[11] With the Internet offering millions of points of data as the bot's database from which to pull information, trouble necessarily arises when the AI creates an image that clearly violates existing copyright, doing so either at the behest of the user or by maligned happenstance.[12]

Recently, the Supreme Court held in *Google v. Oracle* that the creator of a software was protected from a copyright infringement claim by the doctrine of fair use (fair use) where the allegedly infringing code was copied directly from copyrighted code.[13] The Court relied on a qualitative and quantitative analysis, holding that Google did not infringe Oracle's copyright because the final product used only a small portion of the copyrighted code, the portion it used was small in proportion to the total volume of original code, and the purpose that the final product served was different from the purpose of the copyrighted code.[14] This case heralds important consequences in how to navigate the murky waters of AI-generated imagery.

This Note argues that because AI image-generation platforms treat the copyrighted works from which they gather information as data in a larger

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8. Charlie Warzel, *Where Does Alex Jones Go From Here*, THE ATLANTIC (Aug. 9, 2022), https://newsletters.theatlantic.com/galaxy-brain/62f28a6bbcbd490021af2db4/where-does-alex-jones-go-from-here/ [https://perma.cc/4YLV-BUGW] (The article discusses the likely legal outcomes for Alex Jones during his pending litigation, but more importantly features a graphic of "Alex Jones inside an American Office under fluorescent lights" generated on the AI art generation platform Midjourney.); *see also* Press Release, Shutterstock, Shutterstock Partners with Open AI and Leads the Way to Bring AI-Generated Content to All (Oct. 25, 2022), https://www.shutterstock.com/press/20435?irclickid=39YTfO1jIxyNU8EUobwjwUDfUkDV7X2lQ1ECyw0&irgwc=1&utm_medium=Affiliate&utm_campaign=Skimbit%20Ltd.&utm_source=10078&utm_term=theverge.com [https://perma.cc/D67J-UX5R] (announcing that Shutterstock, the stock image company, would add a function wherein users could generate images using the AI image-generation platform DALL-E 2).

9. Tyler Lacoma, *How to Use Midjourney to Generate AI Images*, DIGITALTRENDS (Oct. 21, 2022), https://www.digitaltrends.com/computing/how-to-use-midjourney-to-generate-ai-images/ [https://perma.cc/6EZ9-L3CU].

10. Aditya Singh, *How Does Dall-E 2 Work*, MEDIUM (Apr. 27, 2022), https://medium.com/augmented-startups/how-does-dall-e-2-work-e6d492a2667f. [https://perma.cc/D54D-EUB3].

11. Harry Surden, *Machine Learning and the Law*, 89 WASH. L. REV. 87, 94 (2014).

12. MidjourneyBot (@Midjourneybot), Discord, https://media.discordapp.net/attachments/1012833258293182585/1069009887004213328/grid_0.webp?width=579&height=579 [https://perma.cc/Y9P7-JKJ3] (via private message, an AI-generated image responding to the prompt, "Mickey Mouse waving the Saudi Arabian flag").

13. Google LLC v. Oracle Am., Inc., 141 S. Ct. 1183, 1204-05 (2021).

14. *Id.*

string of information, *Google v. Oracle* presents the best model for assessing whether the generated image is protected by fair use because the case provides a framework for analyzing code as a tool in the production of a creative work and is instructive on each of the fair use factors.

With the burgeoning technology and all its commercial implications just on the horizon, legal discussion, or more aptly litigation, seems unavoidable to determine the usage of such technology, particularly about how image generation platforms learn from copyrighted material or produce a final product that is otherwise very similar to copyrighted material. For example, a recent class action lawsuit was filed against Microsoft, GitHub, and OpenAI on behalf of programmers who submitted lines of code to the open-source database GitHub.[15] The complaint alleges that GitHub Copilot, an AI platform that uses the GitHub database to generate code in response to plain text user inputs, violated the copyrights of those who contributed code to the database by failing to attribute the code it produced to the code from which it learned, even when the two were substantially similar.[16] In a separate case, a complainant who works in developing and applying AI sued the Register of Copyrights and the Director of the United States Copyright Office after they denied a copyright application.[17] The complainant listed himself as the owner and listed the author of the work as an AI image-generating program of his own making.[18] The complainant echoes Allen's warning in his insistence that AI is "going to be profoundly economically and socially disruptive, as [AI programs] evolve from essentially academic pursuits to those having significant commercial value, including in the context of personalized music, journalism, and digital art."[19] In fact, the United States Copyright Office has recently shifted course to focus more heavily on issues arising from AI.[20]

This Note will first discuss the current status of copyright law as it pertains to AI, with a specific focus on fair use and how courts interpret whether an allegedly infringing work is "transformative" by way of "altering the original with new expression, meaning, or message."[21] Next, this Note will offer a brief introduction on the methodology employed by AI image-generating platforms when creating an image in response to a user prompt. This section will then discuss the difficulties in mapping exactly what data points, and in what proportions, the platforms use when creating an image,

15.   James Vincent, *The Lawsuit that Could Rewrite the Rules of AI Copyright*, THE VERGE (Nov. 8, 2022), https://www.theverge.com/2022/11/8/23446821/microsoft-openai-github-copilot-class-action-lawsuit-ai-copyright-violation-training-data [https://perma.cc/9535-VXQ4].

16.   Complaint and Demand for Jury Trial, J. Doe v. Github, Inc., No. 4:22-cv-06823-KAW, 2022 WL 16743590, at *2-3, 24 (N.D. Cal. Nov. 3, 2022).

17.   Complaint, Thaler v. Perlmutter, No. 1:22-cv-01564, at *1-2 (D.D.C. 2022).

18.   *Id.* at 2.

19.   *Id.*

20.   Riddhi Setty, *Copyright Office Sets Sights on Artificial Intelligence in 2023*, BLOOMBERG LAW (Dec. 29, 2022, 5:00 AM), https://news.bloomberglaw.com/ip-law/copyright-office-sets-sights-on-artificial-intelligence-in-2023 [https://perma.cc/4UCD-NU35].

21.   Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 569 (1994).

also known as the "black box" problem. This section will also discuss different suggestions for viewing AI image-generation platforms as tools of the artists. Finally, this Note applies each of the fair use factors discussed in *Google v. Oracle* to AI image-generating platforms to demonstrate why the Court's analysis in the aforementioned case provides a pathway forward for cases surrounding fair use and AI-generated art.

With the rising popularity of various AI programs across different industries and markets,[22] the focus of this Note must necessarily be narrow. As such, this Note will not discuss fair use as it pertains to anything other than AI image-generation platforms. Moreover, this Note will not argue whether the user, programmer, or platform is fit for consideration as the primary author of a work fit for copyrightability, given the Copyright Office's stance on machine authorship.[23]

II.   BACKGROUND

A.   *Copyright, Fair Use, and its Implications in* Google

In general, Section 102 of the Copyright Act of 1976, codified as 17 U.S.C. § 102, sets the stage for applicable copyright law by establishing the broad categories of "original works of authorship fixed in any tangible medium . . . either directly or with the aid of a machine or device."[24] The phrase "original works of authorship" is vague by intent so as to incorporate the standard of originality "established by the courts under the present copyright statute."[25] The broad aspect of this language is specifically meant to mimic "the empowering language of the Constitution."[26] Critically, in the case of AI, the Copyright Office does not consider work generated by a non-

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22.   Serenity Gibbons, *2023 Business Predictions as AI and Automation Rise in Popularity*,   FORBES   (Feb.   2,   2023,   6:00   AM), https://www.forbes.com/sites/serenitygibbons/2023/02/02/2023-business-predictions-as-ai-and-automation-rise-in-popularity/?sh=4c7d6395744b [https://perma.cc/FNP4-E8CG]; *see also* OpenAI, *ChatGPT: Optimizing Language Models for Dialogue*, OPENAI (Nov. 30, 2022), https://openai.com/blog/chatgpt/ [https://perma.cc/69TX-C237] (describing the functionality of the popular AI chatbot, ChatGPT); Soundraw, *Frequently Asked Questions*, SOUNDRAW, https://soundraw.io/faq [https://perma.cc/2SPR-CVWQ] (an FAQ page describing an AI platform that uses user inputs to generate music).

23.   Andres Guadamuz, *Artificial Intelligence and Copyright*, WIPO MAG. (Oct. 2017), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html [https://perma.cc/G5U3-YMSZ] (discussing that the US Copyright Office does not recognize machines or computers as authors).

24.   17 U.S.C. § 102 (1976).

25.   H.R. REP. No. 94-1476 at 51 (1976).

26.   *Id.* (referencing CONST. art. I, § 8 cl. 8, "[t]o promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries").

human to be copyrightable.[27] Other countries hold similar schema, with Spain and Germany holding that works created solely by machines are ineligible for copyright protections.[28] Spain goes further, eschewing fair use altogether, instead preferring a payment obligation scheme.[29]

A key aspect of authorship within the confines of Section 102 is the topic of creative or original authorship. Title 37 of the Code of Federal Regulations requires that "[i]n order to be acceptable as a pictorial, graphic, or sculptural work, the work must embody some creative authorship in its delineation or form."[30] Section (b) of the same rule qualifies that "[a] claim to copyright cannot be registered in a print or label consisting solely of trademark subject matter and lacking copyrightable matter."[31] The Supreme Court referenced this requirement for creative authorship in determining that a telephone company and telephone book producer lacked a copyright over the content of its white pages as it was merely a compilation of names, towns, and telephone numbers, which lacked an essential aspect of creative authorship that turns otherwise publicly accessible information into a "copyrightable expression."[32] The manual for Copyright Office practices expands on the concept, adding that the work must be "the author's tangible expression of his [or her] ideas," paired with the conveyance of that expression in a tangible medium.[33] Expressions that convey a sense of message or meaning either in a definite sense, as might be the case with a sculpture of the human form, or more abstractly, through color or "modernistic form," are copyrightable.[34] Such original authorship may manifest in content but also in form, such as "the linear contours of drawing,

27. U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 906 (3d ed. 2021) ("Works that have not been created by a human being . . . do not satisfy the requirement [for authorship]"); Riddhi Setty & Isaiah Poritz, *'Wild West' of Generative AI Poses Novel Copyright Questions*, BLOOMBERG LAW (Nov. 18, 2022), https://news.bloomberglaw.com/class-action/wild-west-of-generative-ai-raises-novel-copyright-questions?utm_source=rss&utm_medium=CLNW&utm_campaign=00000183-f0b0-dfbc-a5db-f3f82d760001 [https://perma.cc/3JMA-988F] (detailing how an artist became the "first person to register a copyright for an artificial intelligence-assisted work," with the US Copyright Office, however, upon realizing that the art had been created by an AI as opposed to the author himself, the Copyright Office informed him that it intended to revoke the Copyright, citing the necessity for a human author).

28. Guadamuz, *supra* note 23.

29. Iban Lopez et al., *Copyright Litigation in Spain: Overview*, THOMSON REUTERS (Dec. 1, 2018), https://uk.practicallaw.thomsonreuters.com/w-011-1027?transitionType=Default&contextData=(sc.Default)&firstPage=true#:~:text=To%20avoid%20being%20found%20guilty,does%20not%20exist%20in%20Spain [https://perma.cc/F66Q-6GZN]

30. 37 C.F.R. § 202.10 (1981).

31. *Id.*

32. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc., 499 U.S. 340, 341 (1991). Note that the Court also points out that while the work must possess "at least some minimal degree of creativity." *Id.* at 345. The requisite level of creativity is extremely low; even a slight amount will suffice. *Id.*

33. U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 905 (3d ed. 2021) (quoting Mazer v. Stein, 347 U.S. 201, 214 (1954)).

34. *Id.*

the design and brush strokes of a painting, the diverse fragments of a collage…among other forms of pictorial or graphic expression."[35]

Section 103 of Title 17 of the United States Code describes the nature of copyright protections for derivative works, extending protections "only to the material contributed by the author of such work."[36] Congress elaborated that "[a] 'derivative work' on the other hand, requires a process of recasting, transforming, or adapting 'one or more preexisting works:' the 'preexisting work' must come within the general subject matter of copyright set forth in Section 102, regardless of whether it is or ever was copyrighted."[37] The Copyright Office considers copyrightable authorship in derivative works to stem from a subsequent author having "contributed a sufficient amount of new authorship to create an original work of authorship."[38]

1. The Key Factors of the Fair Use Doctrine

Section 107 of Title 17 describes the affirmative defense of fair use and lays out the four key factors of the doctrine.[39] They are:

> [1] The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
>
> [2] The nature of the copyrighted work;
>
> [3] The amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
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> [4] The effect of the use upon the potential market for or value of the copyrighted work.[40]

The most illustrative example of application of each of these factors is *Campbell v. Acuff-Rose*, wherein the Supreme Court explored fair use as it applied to a parody.[41] In that case, the Court held that the "purpose and character of use" factor was a key mechanism for determining whether the new work transforms the first "with a further purpose or different character, altering the first with new expression, meaning, or message."[42]

The "nature of the copyrighted work" factor oftentimes requires little analysis as it mainly applies within the context of delineating between

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35.   *Id.*
36.   17 U.S.C. § 103(a) (1976).
37.   H.R. REP. No. 94-1476 at 54.
38.   U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 907 (3d ed. 2021).
39.   17 U.S.C. § 107 (1976).
40.   *Id.*
41.   Rachel Morgan, *Conventional Protections for Commercial Fan Art Under the U.S. Copyright Act*, 31 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 514, 531 (2020).
42.   *Campbell*, 510 U.S. at 577, 579.

fictitious and factual works.[43] With regard to the analysis of AI-generated imagery, it is of little value.

The third factor, regarding the amount and substantiality of the copyrighted work used by the final product, asks whether "the quantity and value of the materials used . . . are reasonable in relation to the purpose of the copying."[44] This factor bears a significant amount of weight both in the breakdown of *Google v. Oracle* and in the analysis of AI-generated art. Critically, while this factor takes into account the sheer volume of copyrighted material functionalized by the work in question, it also takes into account the import of the copyrighted material to its overall use.[45] For instance, in *Harper & Row, Publishers v. Nation Enterprises*, the defendant had taken only some 300 words from the memoir of President Ford for use in an ultimately premature publication, yet the 300 words that they used represented the "heart" of the otherwise copyrighted work.[46] Because the defendant touched on an aspect of the copyrighted work that was central to its overall use and purpose, The Court, in rejecting the application of fair use, implicitly indicating that the weight assigned to each factor varies on a case-by-case basis according to both the content of the original work and the new work in which the original appears.[47]

Finally, the fourth factor regarding "the effect of the use upon the potential market for or value of the copyrighted work"[48] requires consideration as to whether the creation or existence of the new work "would result in a substantially adverse impact on the potential market for the original."[49] *Sony Corporation v. Universal City Studios* exemplifies such a non-infringing use by way of market impact created by the new work.[50] In that case, the Court held that there were a myriad of non-infringing uses for a Betamax VCR set, and therefore, the limited opportunity by which the devices could infringe on copyrighted materials was not unreasonable.[51]

2. *Google v. Oracle* Expands Application of Fair Use Doctrine on Technology

In *Google v. Oracle*, the Supreme Court decided whether Google's code was protected by fair use, where it used a small percent of open-source code owned by Oracle. In summary, in the development of software for its new Android cellphones, Google engineers, who had historically used the Java programming language, developed a new platform after negotiations between Google and Oracle's predecessor failed, whereby Google failed to

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43.   Morgan, *supra* note 41, at 532.

44.   *Campbell*, 510 U.S. at 586 (quoting Folsom v. Marsh, 9 F. Cas. 342, 348 (C. C.D. Mass. 1841)) (internal quotations omitted).

45.   *Id*. at 587.

46   Harper & Row Publishers v. Nation Enters., 471 U.S. 539, 565 (1985).

47.   *Id*.

48.   17 U.S.C. § 107.

49.   *Campbell*, 510 U.S. at 590 (internal quotations omitted).

50.   Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984).

51.   *Id*. at 444.

obtain a license to use Sun Java application programming interface (API) in its programming.[52] In Google's platform, the software engineers copied roughly 11,500 lines of code from the Java SE program as part of a tool called an API. An API "allow[s] programmers to use . . . prewritten code to build certain functions into their own programs rather than write their own code to perform those functions from scratch."[53] Oracle, who came to own the lines of code that the Google engineers had copied, sued Google, alleging that its Android Platform's use of the Sun Java API violated Oracle's copyright.

In its analysis of Google's fair use defense, the Court considered the Android Platform's use of Sun Java API under the four factors set forth by 17 U.S.C. § 107.[54] First, it investigated the nature of the copyrighted work. Without delving into the specifics of computer programming, Sun Java API represents a single aspect of the overall code, a tool that allows a significant portion of uncopied code to perform intricate tasks unrelated to the API itself and which require immense creativity on the part of the programmers.[55] Recalling *Campbell*, the Court emphasized that some creations are "closer to the core of [copyright] than others,"[56] counting the script as far enough from the core of the work to merit a fair use defense.[57]

Second, with regard to the purpose and character of the use, the Court once again applied its analysis from *Campbell*, finding that even when a work is copied verbatim, if it falls within the scope of a broader final product, the final product is transformative on the original work by adding something new or otherwise changing the message of the original work.[58] The Court proffered an example where verbatim copying would be protected by fair use by suggesting that an artistic work could directly copy a copyrighted logo as part of a broader work about consumerism.[59] In *Google*, the Court found that the Android platform served an entirely different purpose than the API.[60]

Third, in reference to the amount of the copyrighted material used, the Court noted that while at face value it would seem that 11,500 lines of copied code is substantial, it represents only 0.4% of the total set of Java API computer code.[61] Even a small portion of copyrighted material may defeat fair use where the material is the heart of the original's work, per *Harper & Row*. Here, the lines Google used were not the heart of Sun Java but a single functional aspect that Google used to allow programmers to continue to build on their own creative endeavors in such a way that programmers did not need to learn a new programming language.[62] While a small portion of a copyrighted material that is the "heart" of the original work may defeat a fair

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52. *Google*, 141 S. Ct. at 1190-91.
53. *Id.* at 1191 (quoting Oracle Am., Inc. v. Google, Inc., 750 F.3d 1339, 1349 (Fed. Cir. 2014)).
54. *Id.* at 1201.
55. *Id*. at 1202.
56. *Id.* (quoting *Campbell*, 510 U.S. at 586).
57. *Id.*
58. *Google*, 141 S. Ct. at 1202-03.
59. *Id.* at 1203 (quoting 4 M. Nimmer & D. Nimmer, Copyright § 13.05[A][1][b]).
60. *Id.* at 1202, 1204.
61. *Id.* at 1205.
62. *Id.* at 1205-06

use defense, Google did not use the lines that were the "heart" of the Sun Java API.[63] Rather, Google programmers used lines from the API to continue their own creative endeavors without the need to learn an entirely new programming language.[64]

Finally, the Court delved into the market effects that would likely result from the widespread acceptance of the Android platform.[65] The Supreme Court found that not only would the public benefit from Android's product[66] but also that the Java product and the Android product served two different functions, so there was no risk to Oracle that the Android platform would supersede or replace the Java APIs it used.[67]

3. Transformative Use and its Role in the Fair Use Analysis

Campbell introduced the idea that the courts can consider whether the work is transformative, which calls for a case-by-case analysis to determine whether the new work provides a new meaning or message to the original such that the communicative effect of the new piece is noticeably different from the communicative effect of the old.[68] Courts may consider whether both the new and old works serve a commercial purpose, with the transformation from an original commercial use to a noncommercial use representing a particularly weighty factor in favor of fair use.[69] While transformative use is not necessary for a finding of fair use,[70] the more transformative the new work, "the less [it] will be the significance of the other factors, like commercialism, [which] may weigh against the finding of fair use."[71]

Since that ruling, several other cases have made use of the transformative use standard, illustrating how widely it can be interpreted, particularly in the realm of fan art and parody.[72]

In *Suntrust v. Houghton,* the Eleventh Circuit held that a parodical adaptation of *Gone with the Wind* was protected by fair use where it borrowed a measure of identical characters, lines of dialogue, and themes from the original because it ultimately made use of those identical elements to highlight a new story, namely the perspective of the black characters from the original, which ultimately framed a meta-critique of the original work and the whitewashed genre overall.[73] In doing so, the court found that the new work's use of the original work was transformative.

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63.   *Id*. at 1205.
64.   *Google*, 141 S. Ct. at 1205-06.
65.   *Id.* at 1206.
66.   *See id.* at 1206, 1208.
67.   *Id*. at 1207.
68.   *Campbell*, 410 U.S. at 569.
69.   *Id*. at 569, 577.
70.   *Id*. at 579 (citing *Sony*, 464 U.S at 455).
71.   *Id.*
72.   Morgan, *supra* note 41, at 534-35.
73.   Suntrust Bank v. Houghton Mifflin Co., 268 F.3d 1257, 1269 (11th Cir. 2001).

Conversely, in *Warner Bros. v. RDR Books*, the District Court for the Southern District of New York held that a fan-created encyclopedia of J.K. Rowling's literary universe was not protected by fair use.[74] Even though the existence of an encyclopedia embellishes the magical aspect of the literary universe, the transformative use of the information within is lessened because the encyclopedia copied verbatim text from the copyrighted source.[75] Critically, the copying was "in excess" without the requisite addition of some aspect that altered or enhanced the meaning of the original copied work.[76]

In *Authors Guild v. Google,* the Supreme Court held that Google's digital copying of entire books (and subsequent public display of small portions of those books) in a search engine for digital books was fair use of the copyrighted material because the search engine's purpose was distinctly transformative of the initial written work because it "communicat[ed] something new and different from the original or expand[ed] its utility, thus serving the copyright's overall objective of contributing to public knowledge."[77]

Finally, *Google v. Oracle* also describes transformative use in its analysis of purpose and character of the use.[78] In that case, the Court compared the two products in terms of the roles they fulfilled, not just in the market but at face value.[79] They observed that the role Java API played within the overall Android platform was limited and that the brunt of Google's creative input was in what the Java API helped the code accomplish and was not itself the accomplishment.[80] For this reason, the Court held that Google's use of Java API was transformative in nature and therefore weighed in favor of fair use.[81] These cases, taken together, provide a useful lens through which to view fair use as it applies to AI when combined with a substantive understanding of the inner workings of such mechanisms.

B. *Artificial Intelligence Image Generation Platforms*

AI Image Generation Platforms are programs that receive data in the form of user-inputted text describing an image and that use that data in conjunction with a process called machine learning[82] to generate an image to the specifications of the text.[83] This aspect of machine learning is meant to, in

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74. Warner Bros. Ent. v. RDR Books, 575 F. Supp. 2d 513, 544 (S.D.N.Y. 2008).
75. *Id.*
76. *Id.*
77. Authors Guild v. Google, Inc., 804 F.3d 202, 214 (2d Cir. 2015).
78. *Google*, 141 S. Ct. at 1218-19.
79. *Id.* at 1206-07
80. *Id.* at 1203.
81. *Id*. at 1204.
82. Zack Naqvi, *Artificial Intelligence, Copyright, and Copyright Infringement*, 24 MARQ. INTELL. PROP. L. REV. 1, 18 (2020).
83. *See generally* Singh, *supra* note 10 ("[A] text encoder takes the text prompt and generates text embeddings. These text embeddings serve as the input for a model called the prior, which generates the corresponding image embeddings. Finally, an image decoder model generates an actual image from the embeddings.").

some regards, simulate the biological learning process.[84] While robust in the methods an AI may take to complete a task, AI lacks free will in the philosophical sense because it is bound by the task for which it was designed, vis-à-vis the inherent limitations of its programming.[85]

1. User Experience on Image-Generation Platforms

The user-facing aspects of these programs are similar in nature, so this section discusses the process for image generation through the unpaid non-subscription model on the platform Midjourney as generally representative of the overall user experience. Midjourney operates over the messaging app Discord, wherein users interact with the AI by sending it messages containing specific keywords to which it responds.[86] When a user has an idea for an image they would like to generate, they type "/imagine" into the chat, which opens up a specialized textbox where users can enter the specific parameters of their request. Requests can range from highly detailed, like "Dionysus, portrait, grapevine crown, vineyard, red palette, surrealistic (*sic*) art," to sparse, such as "loneliness."[87]

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84.   Ryan Calo, *Artificial Intelligence Policy: A Primer and Roadmap*, 51 U.C.D. L. REV. 399, 404 (2017).

85.   Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 IDEA: J. FRANKLIN PIERCE CTR. FOR INTELL. PROP. 431, 434 (2017).

86.   *Quick   Start   Guide*,   MIDJOURNEY   DOCUMENTATION, https://docs.midjourney.com/docs/quick-start [https://perma.cc/EJ5S-NWJ9].

87   *See e.g.* MidjourneyBot (@Midjourneybot), Discord, https://media.discordapp.net/attachments/1012833258293182585/1161682127482540172/bry nnprimrose_lonliness_3686f902-fa3b-438d-95d9-e5d92f532892.png?ex=65392fca&is=6526baca&hm=191db227c75f9f2fdb0cb501399836358 25e5c084dc928cda45a4b9f9d5e646d&=&width=581&height=581 [https://perma.cc/87EZ-PV4Q] (via private message, an AI-generated image responding to the prompt, "loneliness").

Figure 2: AI-Generated Image Responding to the Prompt: "Loneliness"

The bot allows users to make specifications through use of additional commands, including altering the aspect ratio or changing the relative importance of each prompt.[88] When the user sends the prompt information as a Discord message, the bot processes the request and responds to the message with four variant images of its interpretation of the user's prompt.[89] The user is provided the opportunity to select an image and prompt the bot to return four more variations using that image as a basis.[90] Additionally, the user can opt to upscale the image, increasing its resolution and overall clarity.[91] Unless the user opts out, the images for each generation are posted publicly on a Discord message board for other users to see.[92] Platforms like Midjourney and DALL-E 2 provide salient examples of platforms to which the fair use analysis that this Note proffers applies.

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88. Lacoma, *supra* note 9; *Invite the Bot to Your Server*, MIDJOURNEY (2022) https://docs.midjourney.com/docs/invite-the-bot [https://perma.cc/2FFD-2LMW]**.**

89. Lacoma, *supra* note 9.

90. *Id.*

91. *Id.*

92. *User Manual*, MIDJOURNEY DOCUMENTATION, (2022), https://midjourney.gitbook.io/docs/user-manual [https://perma.cc/4B3G-3QA8].

2. Inner Workings of Image-Generation Platforms

The inner workings of the AI are slightly more nebulous than the user experience, and not much documentation exists on the subject. As such, this section explores the inner workings of the image generation platform DALL-E 2 at a very basic level. Broadly speaking, the process occurs in three steps.

First, when the bot receives a text prompt, it sends the text data to a neural network model called Contrastive Language-Image Pre-training (CLIP), which makes connections to the textual description of an object and the visual images to which the text corresponds.[93] For example, when given the prompt, "a corgi in a party hat," DALL-E 2 will search through hundreds of millions of images with associated captions until it finds those that have a strong recurring association with the words "corgi" and "party hat."[94] CLIP then selects the images that match the textual prompt and discards those that do not, generating both encoded text information and encoded image information for what data to use when learning how to construct the prompt.[95] CLIP, in this way, creates its own dataset, which accounts for both "features of images and features of language."[96] That dataset is ultimately what CLIP uses to, in effect, teach itself the relative semantic relations between natural language and a visual concept.[97]

Next, even though CLIP generates image information, DALL-E 2 features a separate image encoder using a diffusion model, called a prior, to learn how to transform computerized information into an image.[98] It does this by taking an image and incrementally adding noise, or disorganization, to it until it is unrecognizable, then reconstructing it to learn how to turn disorder into an organized image, and can apply that process to other datasets of random noise.[99] This process is not dissimilar to taking a solved Rubik's Cube, disorganizing it randomly, and re-solving it to learn how to solve other random Rubik's Cubes.[100] Rather than simply using the CLIP-generated image embeddings, the prior allows DALL-E 2 to integrate multiple prompts into one image.[101]

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93. AssemblyAI, *How Does Dall-E 2 Actually Work*, YOUTUBE (Apr. 15, 2022), https://www.youtube.com/watch?v=F1X4fHzF4mQ&t=375s   [https://perma.cc/HWH7-TNMG].

94. Ryan O'Connor, *How Dall-E 2 Actually Works*, ASSEMBLYAI (Apr. 19, 2022), https://www.assemblyai.com/blog/how-dall-e-2-actually-works/   [https://perma.cc/XB38-G7YN].

95. AssemblyAI, *supra* note 93.

96. Daniel Fein, *Dall-E 2.0, Explained*, TOWARDS DATA SCIENCE (May 16, 2022), https://towardsdatascience.com/dall-e-2-0-explained-7b928f3adce7 [https://perma.cc/BAQ8-XDJ3]

97. O'Connor, *supra* note 94 (explaining that where there are many images and captions on a given subject, for instance a baboon, CLIP can accurately produce image data resulting from the textual input, "baboon." Where CLIP lacks data on a subject, it can often produce erroneous results, like producing an image of a howling monkey when given the textual prompt, "howler monkey").

98. Singh, *supra* note 10.

99. *Id*.

100. Fein, *supra* note 96.

101. AssemblyAI, *supra* note 93.

Finally, now that the prior has taught DALL-E 2 how to unscramble noise into an image that relates to the textual input, the AI can now generate the final image. To do this, DALL-E 2 employs a decoder called Guided Language to Image Diffusion for Generation and Editing (GLIDE) to generate the final image. GLIDE is a modified diffusion model, like the prior, but is unique because, rather than using the visual information to "unscramble the Rubik's cube," GLIDE can also use textual information gathered from CLIP.[102] During the unscrambling process, GLIDE can reapply the text encodings from CLIP while creating an image.[103] This means that, if the text input was "a man with blonde hair," based on the word "man," the prior would teach DALL-E 2 to consistently unscramble static into an image of a man.[104] GLIDE allows the reentry of textual input like "blonde hair" during the image generation process.[105] Note that with diffusion models, because they generate images based on pure "randomly sampled Gaussian noise" (like static), they cannot generate the same image twice because the data they are unscrambling is always different.[106]

Once GLIDE produces a 64x64 pixel image, DALL-E 2 sends the picture through a process called "upscaling," which increases the definition and resolution of the final image,[107] though this aspect is less critical to the copyright analysis of this Note.

3. The Black Box Problem in AI

In the context of computing, data recording, and engineering, a black box is a method or device that receives an input and applies a process to it to produce an output without revealing exactly how that process was applied.[108] Though the process is something the engineer may program, the engineer does not know exactly how it was applied to the input.[109] In this way, a black box operates a bit like a game of Plinko, where the input is the ball as it is dropped into the top of the board. The process includes features like the pegs on which the ball bounces and the gravity which propels the ball downwards onto the pegs. The output is the value of the terminal slot in which the ball lands,[110] with the caveat that the arrangement of pegs is hidden from the viewer such that they cannot chart the path of the ball. Although the setup of the pegs does not change, nor do the constants of gravity, the same input, when subjected to

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102. Singh, *supra* note 10.
103. O'Connor, *supra* note 94.
104. *Id.*
105. *Id*.
106. Singh, *supra* note 10.
107. AssemblyAI, *supra* note 93.
108. Will Kenton, *What is a Black Box Model*, INVESTOPEDIA (Mar. 6, 2022), https://www.investopedia.com/terms/b/blackbox.asp [https://perma.cc/JM5X-PTAS]**.**
109. *Id.*
110. Ethan Siegel, *How the Game of 'Plinko' Perfectly Illustrates Chaos Theory*, FORBES (Nov. 11, 2020), https://www.forbes.com/sites/startswithabang/2020/11/11/how-the-game-of-plinko-perfectly-illustrates-chaos-theory/?sh=50281fe41a09 [https://perma.cc/T329-LCUB].

those processes, yields different results while holding secret the path the ball took to reach those results.

In the context of AI, the method for processing user input includes an algorithm that intakes millions of data points from a given database, learns correlation about that data, and applies those correlations in an output.[111] Such data correlation often takes the form of decision trees, which are a set of rules[112] that outline the various choices the AI will make to a given string of data to lead to different answers.[113] A neural network, commonly the vehicle for the learning process AI utilizes in generating outputs, requires making computational decisions on millions, if not billions, of numbers.[114] The end result is a system that is too complex for the current mapping capabilities of computer science technology.[115] In this way, an AI functions like a series of interconnected nodes that tend to act when enacted upon by other nodes.[116] When a node receives data, it enacts a calculation in comparison with a threshold value.[117] Whether or not that calculation surpasses that threshold value determines the next node to which that data travels.[118] In essence, a neural network operates as innumerable sets of aforementioned Plinko sets, with the result of one game dropping the ball directly into the next. With millions of different permutations between nodes, it becomes functionally impossible for researchers to determine exactly which nodes fired to produce an output. That is a black box.

Within the context of AI Image Generation Platforms, a neural network learns how to interpret various aspects of an image by using nodes to track specific qualities such as color, brightness, and other such differences between adjacent pixels.[119] The machine then scours through its database of hundreds of thousands of examples, looking for statistical similarities in the trends it learned to establish the patterns and recreate an output.[120]

4.   Conceptualization of AI as a Tool

As new technologies emerge to help artists in the pursuit of their artistic endeavors, copyright law adapts to accommodate.[121] The United States Code

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111. Ivy Wigmore, *Black Box AI*, TechTarget (Aug. 2019), https://www.techtarget.com/whatis/definition/black-box-AI#:~:text=Black%20box%20AI%20is%20any,sense%2C%20is%20an%20impenetrable%20system [https://perma.cc/97JB-QA6T].

112. *See* Neil Savage, *Breaking Into the Black Box of Artificial Intelligence*, Nature (Mar. 29, 2022), https://www.nature.com/articles/d41586-022-00858-1 [https://perma.cc/AE26-ZFSA].

113. *Id.*

114. *Id.*

115. *Id*.

116. *Id.*

117. Savage, *supra* note 112.

118. *Id.*

119. Naqvi, *supra* note 82, at 19.

120. *Id.*; Savage, *supra* note 112 (describing generally the process by which a neural network can learn to detect whether an image has a cat in it by first being fed images of cats).

121. *See* Naqvi, *supra* note 82, at 34; *See also* Hristov, *supra* note 85, at 433.

expressly permits the use of a machine or device in the creation of copyrightable works.[122] In fact, in 1884, long before the concept of AI had entered the boundaries of the Copyright Office's consideration, the courts were faced with the issue of how to contend with the introduction of a new form of creative expression: the photograph.[123] In *Burrow-Giles Lithographic Co. v. Sarony*, the Court held that a photograph of Oscar Wilde was eligible for copyright protection despite early protest that the author of the work merely operated a tool that ultimately produced the image because the picture was still emblematic of the author's (in this case photographer's) vision by way of selecting Mr. Wilde's pose, costume, setting, etc.[124] The key, therefore, lies in the extent to which the author exerts their own creative will over the end result.[125]

Today, artists seeking to create copyrightable works use cameras ubiquitously. Plenty of cameras in circulation today, such as that on the iPhone, rely heavily on computer processing and software that automatically captures, digitizes, and enhances a split-second moment of reality.[126] With both a digital camera and an AI art generation platform applying aspects of computer generation, the two mechanisms are comparable, especially if viewed as tools employed by an author to express an idea.[127]

In its present, nascent state, AI occupies a somewhat ambiguous stature in copyright law. Section 313.2 of the *Compendium of The U.S. Copyright Office Practices*, citing a report to the Librarian of Congress, states of works lacking human authorship (emphasis added):

> 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. The crucial question is whether the work is basically one of human authorship, with the computer…merely being an assisting instrument, or whether the traditional elements of authorship in the work . . . were actually conceived and executed not by man but by machine.[128]

But in the context of AI, which operates both on user input and millions of points of data along a series of highly complex decision trees, what does

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122. *See* 17 U.S.C. § 102(a) ("Copyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression . . . from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device").

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

124. *See id.* at 59, 61.

125. *See id.* at 59.

126. APPLE INC., PHOTOS: PRIVATE, ON-DEVICE TECHNOLOGIES TO BROWSE AND EDIT PHOTOS AND VIDEOS ON IOS AND IPADOS, 12 (Sept. 2019).

127. Hristov, *supra* note 85, at 435-36.

128. U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2021) (internal quotations omitted) (quoting U.S. COPYRIGHT OFFICE, REPORT TO THE LIBRARIAN OF CONGRESS BY THE REGISTER OF COPYRIGHTS, 5 (1966)).

the phrase "creative input or intervention" really mean? Details contained within Wikimedia Foundation's response to the United States Patent and Trademark Organization's Request for Comments is particularly illustrative on this point. It suggests that although the Copyright Office does not recognize works or aspects of works that are naturally occurring or randomly generated as copyrightable,[129] where a human author guides those processes along as part of a whole work, the authorship "is vested in the person who deliberately set the automated process in motion in a creative way, or who contributed human creativity by modifying or combining and arranging the results of natural or automated processes in a sufficiently creative way."[130]

Wikimedia's letter also describes a salient example of machine-assisted human creativity wherein a sculptor uses a 3D printer to print an object of their own design and inadvertently leaves the machine on too long, thereby altering the intended creation in such a way that the sculptor finds cohesive with and an improvement on the initial design.[131] In a separate example, where the sculptor simply turns the machine on with no model to print and simply allows the pliable plastic to form a pile, the pile lacks human authorship.[132] In the latter case, Wikimedia posits that already-established jurisprudence would exclude the pile of plastic under the ruling in *Feist Publications v. Rural Telephone Service*, where the Supreme Court held that there exists a threshold of originality and human-guided intention which controls copyrightability under the 1976 revisions to the Copyright Act.[133] While the Wikimedia article speaks to authorship as it pertains to copyrightability, its analysis is still germane to the defense of fair use insofar as it describes how a user can guide an image generation platform to create work that is transformative of whatever copyrighted material the AI uses in its black box calculations.

III.   ANALYSIS

So, where does that leave AI image-generation platforms in terms of fair use? Fair use views art as an object of creativity, particularly as it subscribes to the underlying philosophy that art begets art, and authors need protections to take inspiration from the works that came before to produce what comes next. But AI, though in some ways mimicking the thought process of the human brain,[134] is at its core a program—lines of software that sit dormant unless acted upon by a human user. When given an input, an AI program carries out a series of instructions, passing information along a series

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129. *See* U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES §§ 906.6-906.7 (3d ed. 2021), https://www.copyright.gov/comp3/chap900/ch900-visual-art.pdf. [https://perma.cc/8A27-QUPX].

130. Wikimedia Foundation, Comment Letter on Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation, 3 (Jan. 10, 2020), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.uspto.gov/sites/default/files/doc uments/Wikimedia-Foundation_RFC-84-FR-58141.pdf [https://perma.cc/S4C8-FGLZ].

131. *See id.* at 4.

132. *See id.*

133. *Feist*, 499 U.S. at 359-60.

134. Savage, *supra* note 112.

of decision trees, each of which directs and redirects the information, adding new instructions until it arrives at the terminus the end user requested.[135] In this way, the AI's treatment of information, be it user-inputted or derived from open-source material, is like the API's in *Google*, where the Court stressed the use of API as a tool for providing instructions.[136] Therefore, when it comes to assessing whether and to what extent the fair use doctrine applies to images created by an image generation platform that used copyrighted works as training data, the most germane basis for courts to apply is that of the outcome of *Google v. Oracle*.

In each factor of fair use, the Supreme Court's analysis in *Google* provides an instructive framework that courts can apply, particularly as the capabilities of computer scientists to crack the black box of AI improves.

A. The Court's Analysis of Purpose and Character of the Use in Google *as it Relates to AI*

The first two factors that 17 U.S.C. § 107 describes are (1) "[t]he purpose and character of the use" and (2) "the nature of the copyrighted work."[137] In applying *Google* to AI, these two factors may be considered together as they relate to whether an AI's use of copyrighted images is transformative. When determining whether a work is transformative, courts look to whether the new work has added something new or altered the standalone role of the original work. In *Google*, the Court found that the use of Oracle's API was transformative because the role it played in Google's overall code was similar to that of a tool that allowed Google engineers to enact their own creative expression on a final end-user product.[138] Had Google copied Oracle's code for the purpose of creating its own API that other software engineers would use in their own products, the Court may well have ruled differently.

AI image-generation platforms, similarly, use their database of images and text in the same way insofar as they functionalize the existing images only as points of data from which to generate something new. The most crucial aspect, in this regard, is the methodology by which the programs incorporate image data. Recall that there are three key steps to the way Image Generation Platforms like DALL-E 2 creates an image: (1) CLIP transforms text input into an encoded text and image information, (2) the diffusion model creates a prior and learns how to deconstruct and reconstruct the encoded text information from CLIP, and (3) GLIDE uses the diffusion data from the prior and applies it to the text information from CLIP to create a final image.

When a user enters a textual input into the program, the AI will access its database of millions of images and their co-occurring texts and metadata. It will then pass those points of data through its series of nodes to find commonalities like common colors, brightness differences between pixels,

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135. *Id.*
136. *Google*, 141 S. Ct. at 1191-92.
137. 17 U.S.C. § 107.
138. *Google*, 141 S. Ct. at 1192

and other such characteristics to create correlations between the text and the images to which they correspond. In doing so, the AI learns to include those commonalities in its final generation. For example, if the text input is "a black cat perched on a windowsill," the AI will scour its database for instances where the term "black cat" appears with an image and will find commonalities within the images, such as black fur, two triangular ears, and yellowish eyes. When generating an image, the AI will apply those commonalities to its own image.[139]

Figure 3: AI-Generated Image Responding to the Prompt: "Black Cat on a Windowsill"

This process, in effect, mimics Google's use of APIs as tools that enable further creative expression. In the black cat example, CLIP compiles the image and text data into strings. The strings themselves do not appear in the final generation but rather instruct the AI on *how* to generate an image which complies with the user input via the prior. Thus, any existing picture of a cat

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139. MidjourneyBot (@Midjourneybot), Discord, https://media.discordapp.net/attachments/1012833258293182585/1068753916285685820/David_Silverman_a_black_cat_perched_on_a_windowsill_6e76306b-52bb-4eb3-ae92-a4ef610852bd.png?width=586&height=586 [https://perma.cc/9KNT-ZLKL] (via private message, an AI-generated image responding to the prompt, "Black cat perched on a windowsill").

serves not as a creative work itself but as a computer-readable tool that enables the computer to generate its own creative expression.[140]

The presentation of database images as code for a purpose and use analysis is superior to the presentation of the AI-as-artist because the black box problem presents a barrier to determining how an AI creatively interprets a copyrighted work. In the case of parody, for example, fair use may protect a work where it copies previous work in such a way as to transform the message of the old work into something new.[141] This, somewhat paradoxically, requires that the new work use enough of the source material that a reasonable viewer be able to both identify the source material and understand that the intent behind the new work is commentary in nature.[142] With a black box, however, it becomes difficult, if not impossible, to determine exactly how much of the source material the AI used and whether it used it with the intent of altering the message of the source material itself. In some cases, courts may have an easy time determining whether the AI substantially applied a particular copyrighted work in a given generation at face value, as they have in other substantiality and proportionality cases.[143] For example, in generating a pleasant landscape setting, Midjourney may occasionally add a facsimile of the Getty Images watermark, a mark used to specify an image as property of the eponymous stock photograph company.[144] This denotes the AI's neural network as having understood the Getty Images watermark as being strongly correlated with landscape imagery, but does it denote that the AI also intended to transform the overall message behind the original picture to make a statement about the images retained by Getty Images? The black box mechanism of AI makes that determination impossible.

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140. *See* Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1523 (9th Cir. 1992) (In that case, the Ninth Circuit found that a video game company's identification and replication of elements of Sega's software to create a pathway for the compatibility of their own, independent games on Sega's console constituted fair use. The court emphasized a distinction between code that is copied to enable further creative expression, which is protected by fair use, and code that simply exploits the creative work of another, which is not).

141. *Campbell*, 510 U.S. at 579.

142. *Id.*; *see* Louis Vuitton Malletier v. Haute Diggity Dog, 507 F.3d 252, 268 (4th Cir. 2007).

143 See e.g., Cariou v. Prince, 714 F.3d 694, 710 (2nd Cir. 2013).

144. MidjourneyBot (@Midjourneybot), Discord, https://cdn.midjourney.com/6eaa6bb8-6248-4c8b-8d93-f4648ac1d613/grid_0.png [https://perma.cc/WT8F-PJS6] (via private message, an AI-generated image responding to the prompt, "renaissance city street, yellow stone buildings, cobblestone streets, vines hanging from balconies, merchants, beautiful, sunny, photogenic, scenic, 8k").

*Figure 4: Image Generated by Midjourney Containing a Facsimile of the
Getty Images Watermark*

In other cases, the transformative, parodical intent of the user is clear, but the black box problem would present courts with the challenge of determining to what extent the AI applied aspects of copyrighted work with transformative intent. For example, under *Campbell*, where an AI image-generation platform's user enters prompts that render an imprecise but clearly recognizable image of Mickey Mouse and nothing else, courts might well find fair use does not protect the image because it does not add "a further purpose or character."[145] But if a user generated an image of Mickey Mouse leading a crusader charge,[146] courts may find that the work does indeed "[add] something new."[147] To the AI, however, both images are merely encoded interpretations of correlations gleaned from multiple data points. Thus, without the analysis added by *Google* in viewing AI generated images as products of code, the black box adds an impenetrable barrier to a determination of artistic interpretation.

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145. *Campbell*, 510 U.S. at 579.

146. MidjourneyBot   (@Midjourneybot),   Discord, https://media.discordapp.net/attachments/1012833258293182585/1069011621361492048/David_Silverman_movie_shot_of_Mickey_mouse_leading_an_Arabian_c_3b6f581d-0e44-48b9-9143-3537355a0460.png?width=579&height=579 [https://perma.cc/YK9G-26ML] (via private message, an AI-generated image responding to the prompt, "movie shot of Mickey mouse leading an Arabian cavalry charge in the middle ages, brandishing a scimitar, charging on horseback, crusades, Mamluk armor, dynamic lighting, epic cinematography –niji") Note that the generated image both does not include features requested in the prompt, such as the scimitar, and includes features not specified, such as the cape. These AI-generated omittances or additions are akin to the blob of plastic added by the 3D printer to the initially specified model in Wikimedia's example.

147. *See Campbell*, 510 U.S. at 579.

Figure 5: AI-Generated Image of Mickey Mouse Leading a Crusader Charge

B. The Court's Analysis of Proportion and Substantiality in Google *as it Relates to AI*

17 U.S.C. § 107 also requires courts consider "[t]he amount and substantiality of the portion used in relation to the copyrighted work as a whole."[148] Absent some transformative effect of the work claiming fair use, courts view the verbatim copying of a copyrighted work as unprotected by fair use.[149] Moreover, even when a new work copies only a small portion of an existing work, fair use may not protect the new work if the portion of the existing work that the new work copied constitutes the "heart" of the existing work.[150] The key to determining what qualifies as the "heart" of a work is whether or not it encapsulates the work's "creative expression."[151]

In *Google*, the Supreme Court interpreted Google's use of Sun Java API not to be outside the boundaries of fair use in proportionality or substantiality.[152] With regards to substantiality, the Court found that Google's purpose in using the APIs was to create an entirely separate system, replete with its own creative expression.[153] Such a goal could not have been accomplished with less copying or use of a new programming language.[154] In

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148.   17 U.S.C. § 107.
149.   *Warner Bros. Ent. Inc.*, 575 F. Supp. 2d at 544.
150.   *Harper & Row*, 471 U.S. at 565.
151.   *Google*, 141 S. Ct. at 1205.
152.   *Id*. at 1209.
153.   *Id.*
154.   *Id.*

so ruling, the Court determined that Google had not copied the "heart" of Oracle's product.[155]

Regarding proportionality, the Court in *Google* held that "the better way to look at the [proportion of Sun Java API] is to take into account the several million lines that Google did not copy."[156] Ultimately, the lines of code that Google copied comprised only 0.4% of the overall product.[157] That is to say, the Court suggests that a fair use analysis should also consider what aspects of a copyrighted work did *not* make their way into the final work.[158]

As it applies to AI, the question of substantiality presents yet another avenue in which the *Google* ruling is better suited to determine fair use for AI-generated images than a prescription of AI-as-artist. Namely, as the Supreme Court in *Google* explained, where a new work copies elements of a copyrighted work which represent the work's "creativity . . . beauty . . . or . . . purpose,"[159] it copies the heart of the work. But AI image generation-platforms make no consideration towards such elements. Just as the Copyright Office's policies denote a view of humans as the ultimate arbiters of creative will,[160] an AI views pictures as simple points of data—lines of code to be analyzed through a neural network. Indeed, the use of database images in determining the placement, relative coloring, and brightness of pixels for the purpose of creating a set of data to be later used in a diffusion model most similarly matches the way Google functionalized the Sun Java API in its final product. In the aforementioned black cat example, the individual images of black cats through which the neural net discovered commonalities did not make direct appearances in the final image (in line with the Court's example of a copyrighted advertising logo used for a work about a political statement).[161] However, the AI image-generation platform incorporated the data image, text data, and metadata the image provided to generate an entirely new image. This new image reflects the extent to which the data from the previous cat pictures had been transformed. This transformation is similar to the application of fair use in *Google* because the nature of the original work had been altered into something new without disturbing the "heart" of the original work.[162]

Proportionality presents perhaps the largest challenge to the application of *Google* as it pertains to AI image-generation platforms. And yet, the challenge it presents also lays the groundwork for its future superiority over other methods of applying fair use to AI. An AI image generator gathers data from a database of millions of points.[163] CLIP, for example, pulls data from across the Internet, revealing inherent biases in the resulting generations, such as "gender-biased occupation representations, and

155. *Id*.

156. *Id.*

157. *Google*, 141 S. Ct. at 1209.

158. *Id.*

159. *Id.*

160. *See* U.S. COPYRIGHT OFFICE, *supra* note 128.

161. *Google*, 141 S. Ct. at 1203.

162. *Id.* at 1202.

163. Singh, *supra* note 10.

. . . predominantly western features for many prompts."[164] Because AI, in its present form, relies on black box methodology, computer and data scientists lack the capability to determine exactly what points of data an AI like DALL-E 2 referenced, how it weighted them within the neural network, how it applied them during the creation of the prior, and how the prior influenced the GLIDE model for each particular generation. As such, it is presently impossible to know, in a manner other than visually, exactly what proportion of a given copyrighted work appears in a generated image.

One possible approach, given the current inadequacy of computer science, is to view the generated image as though it was an extension of the author's precise creative will and to treat the AI as merely drawing inspiration from its database images the way a fan artist might learn a style of drawing through exposure to the target art. Such an approach proffers a purely qualitative analysis of the generated image, which assumes that the AI used all of the database images that the user intended and none that the user did not. Such an approach fails, however, because the nature of machine learning that powers AI means that it will make connections wherever, so determined by its neural network, not its user. As a result, a user who simply inputs the otherwise innocuous description of a "2D cartoon mouse with circular black ears, red pants, gloves, shoes (sic)" will cause the AI to create a connection between those terms, and aspects of Mickey Mouse, which do not appear in the user's prompt (such as his silhouette, body proportions, widow's peak, and nose).[165]

164. *Id.*

165. MidjourneyBot (@Midjourneybot), Discord, https://media.discordapp.net/attachments/1012833258293182585/1161678561711751289/brynnprimrose_2D_cartoon_mouse_with_circular_black_ears_red_pan_9c9accb7-557f-455d-82e6-dc78aa5ed30c.png?ex=65392c78&is=6526b778&hm=a277f43f94a61b59aa5fe105bef5c8717095e2093f1d97e9d34a8dc23fe261e3&=&width=581&height=581 [https://perma.cc/SHU6-5RVA] (via private message, an AI-generated image responding to the prompt, "2D cartoon mouse with circular black ears, red pants, gloves, shoes ").

Figure 6: An AI-Generated Image of a Prompt Describing Some Aspects of Mickey Mouse Without Naming the Character

Suppose, though, that at a time in the future when computer science has progressed, courts could peer into the black box and learn accurately what reference images the AI used and in what proportion. In that reality, courts would be in the perfect position to apply *Google*, as it would become a trivial matter to determine proportionality for the purpose of fair use. Given the wealth of data from which a given AI image-generation platform may learn, such an analysis would alleviate from the courts' consideration any complaint brought by an artist who believes that an AI has wrongfully used their images when, in fact, it has not or has but only in small proportion.[166]

But the use of images for neural net training is not the only factor at play when considering the proportionality and substantiality of the copyrighted work. AI image-generation platforms like DALL-E 2 also rely on diffusion models to create images. Such models use Gaussian noise, or static, to unscramble into an image. Because static is random, no two generations will ever be the same.[167] To that end, even if the generator uses a copyrighted work in its CLIP stage, there is no way to determine, in each

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166. Lindsey Feingold, *Man Inadvertently Proves that Hipsters Look Alike by Mistaking Photo as Himself*, NPR (Mar. 10, 2019, 5:14 PM ET), https://www.npr.org/2019/03/10/702063209/man-inadvertently-proves-that-hipsters-look-alike-by-mistaking-photo-as-himself [https://perma.cc/GW7E-ZA5U] (a news story describing a man who threatened to sue a magazine that ran an article about the visual similarities of hipsters for using a photograph of him as an example, only to later learn that the man in the photograph, who he perceived as himself, was, in fact, not him).

167. Singh, *supra* note 10.

individual generation, what proportion of the copyrighted work will appear without further peering into the ever-elusive black box.

C.   *The Court's Analysis of Effect on the Market in* Google *as it Relates to AI*

The final fair use factor looks to whether the role of a new creation that incorporates copyrighted work "may serve as a market substitute for the original or potentially licensed derivatives."[168]

In *Google*, the Supreme Court gave particular emphasis in pointing out the complexity of making a determination in this category.[169] Importantly, in holding that Google's use of Oracle's code did not wrongfully supplant Oracle's place in the market, the Court focuses not only on the likelihood or lack thereof that Oracle would successfully enter the mobile smartphone industry in which Google was operating.[170] Rather, the Court also emphasized that even if Google's creation caused an economic loss to Oracle, such a loss is protected by fair use if it produces substantial public benefit.[171] Notably, the Court weighed Google's reason for using Oracle's code and found that, at least in part, it was predicated on the idea that it was simply the most useful programming language that the engineers spoke.[172] To deprive it of the ability to create new works of creative expression by barring their use of a vital part of the ubiquitous programming language would "risk harm to the public . . . [g]iven the costs and difficulties of producing alternative APIs with similar appeal."[173]

With regards to a consideration of the public benefit, *Google* becomes instructive as to how courts should apply this standard to AI-generated images. While it is true that the introduction of AI-generated images to the marketplace for the consumption of visual media creates some measure of threat to the artists and photographers already in the market,[174] a consideration for fair use must consider the copyrighted work itself. In other words, when determining the effect on the market for a given copyrighted work, courts must determine the effect that the work claiming fair use has on the copyrighted work's place in the market, not all works in that category.

Because AI image-generation platforms rely on hundreds of millions of points of data when training the neural network, where elements such as markers of style, color, or shape of a copyrighted work appear in a generated image, they tend to do so in a disjointed or piecemeal manner. In this way, the AI merely hints at any aspect of a copyrighted work without delving into what might otherwise be considered cohesive enough a recreation to supplant the

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168. *Campbell*, 510 U.S. at 587.
169. *Google*, 141 S. Ct. at 1206.
170. *Id.* at 1206-07.
171. *Id*. at 1206.
172. *Id.* at 1206-07.
173. *Id.* at 1208.
174. *See* Blake Brittain, *Getty Images Says Stability AI Misued Photos to Train AI*, REUTERS (Feb. 6, 2023), https://www.reuters.com/legal/getty-images-lawsuit-says-stability-ai-misused-photos-train-ai-2023-02-06/ [https://perma.cc/DS4N-PYA6].

market value of the original.[175] Moreover, just as the Court found that it would be too restrictive on the creation of future expressive works to restrict the use of a tool like Sun Java API in programming in *Google*, courts could find that the use of a given image in creating a string of data provides a social benefit in that it affords the public access to a greater number of creative works. Conversely, the courts, applying *Google*, could determine that, though only a small proportion of a given generated image, the elimination of an AI's use of a copyrighted work would otherwise stifle the ability of the public to receive new creative expressions.

IV.   CONCLUSION

Google v. Oracle represents a keystone fair use case. Its implications travel well beyond the rote lines of code that Google's engineers copied. Rather, the Supreme Court set the stage for a framework for interpreting fair use in AI-generated art. That framework appropriately reimagines the generation of an image not as the creative endeavor of an artist before a canvas but as a construction of data points compiled into lines of code. When viewed through that lens, courts may engage in a fair use analysis that accurately reflects the inner workings of these neural networks and AI. As the capability of computer scientists steams onward, the day rapidly approaches when we may finally crack open the black box of AI image-generating platforms.[176] Such a breakthrough would allow computer scientists, software engineers, and courts to view exactly the number and extent of copyrighted works used by AI in its image-generation process.[177] As Allen said, AI is here to stay, and *Google* gives courts the tools to be ready for it.

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175. *Authors Guild*, 804 F.3d at 214-15 (There, the Second Circuit held that Google's search engine, Google Books, was protected by fair use where it showed portions of the books in its database with portions redacted such that no user could read a substantial portion of any book. The court reasoned that even where the use of the copyrighted work was the verbatim copying of the copyrighted work's text, fair use applied because the highly edited and redacted nature of the display ensured that the book previews did not become a marketplace substitute for the books themselves).

176. Savage, *supra* note 112.

177. *Id.*