

Comment On US Copyright Office Artificial Intelligence and Copyright

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Occupation: Individual/Freelance Artist

Introduction:

Hello, my name is Shuwen Li, a long-time past US resident and a freelance artist.

Artificial intelligence, specifically generative AI (hence referred to as genAI), like Stable Diffusion, Midjourney, ChatGPT, etc. has heavily exploited both my and my peers' artworks, while violating copyright in its use and creation.

In this comment, I will try to explain how many of these genAIs hurt the creators, especially the visual artists. As well as why and how they violate copyright.

Further, I will try and provide pieces of evidence supporting my claim.

Section.1 The unethical and copyright-violating creation process of genAI Models.

While these models are being created to exploit multiple creative fields, including Art(painting, drawing), photography, music and composition, writing, programming, etc. since I am an artist, I will focus my comment on the functions, exploitation, and copyright infringements on image-based genAI like Stable diffusion, Midjourney, etc. But note this is similar across the entire genre spectrum.

1.1 How a genAI is created

While a genAI as a technology does not inherently have to hurt creators, in its current state, every genAI requires the gathering and use of a mass amount of training data. And those training data are often scraped from the internet without licensing nor consent from the authors.

This Datasets is then sorted into tags based on features, art styles, author's names, and so on.

The model is then trained on and then tuned from these data sets. It is then able to reproduce, mimic, and remix those data to produce similar products.

1.2 How most of these genAI models are violating copyrights

After their creation, these models are then often distributed via open-source or online APPs (A lot of which are monetized and for profit), allowing anyone's use. This is despite how many of these companies proclaim their genAI's safety.

Those genAI software are then able to replicate the styles/features, and sometimes even the original trained images.

In fact, it's considered a good trait when a model trained can retain accurate data.¹

Meaning these genAI models are essentially lossy compression algorithms. A good analogy would be a zip file tuned to favor the blending of its data.

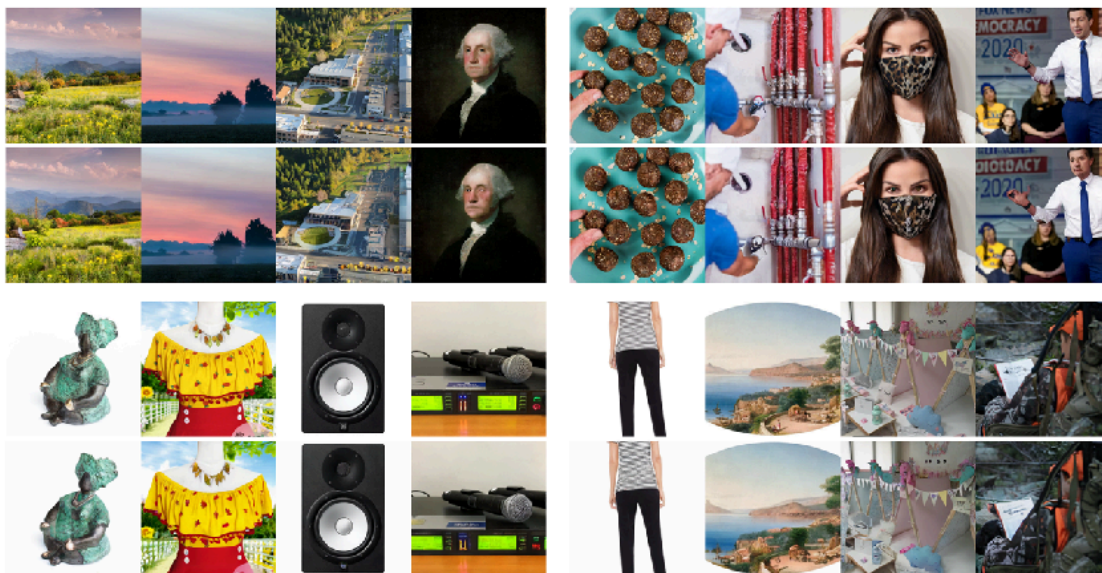
The following example will illustrate how a model can and does pertain its training data.



An image produced by Wuerstchen; a genAI tool made by Hugging Face; compared to its Dataset image- notice how it's able to replicate the original Dataset image, retaining most of its features.

This is taken from -Figure 4 from the same paper "Wuerstchen: Efficient Pretraining of Text-to-Image Models"

¹ 1 Wuerstchen: Efficient Pretraining of Text-to-Image Models: https://www.researchgate.net/publication/371222697_Wuerstchen_Efficient_Pretraining_of_Text-to-Image_Models



A snippet from Figure 4 of the same paper. Further Demonstrating genAI's capabilities in recreating it's training data

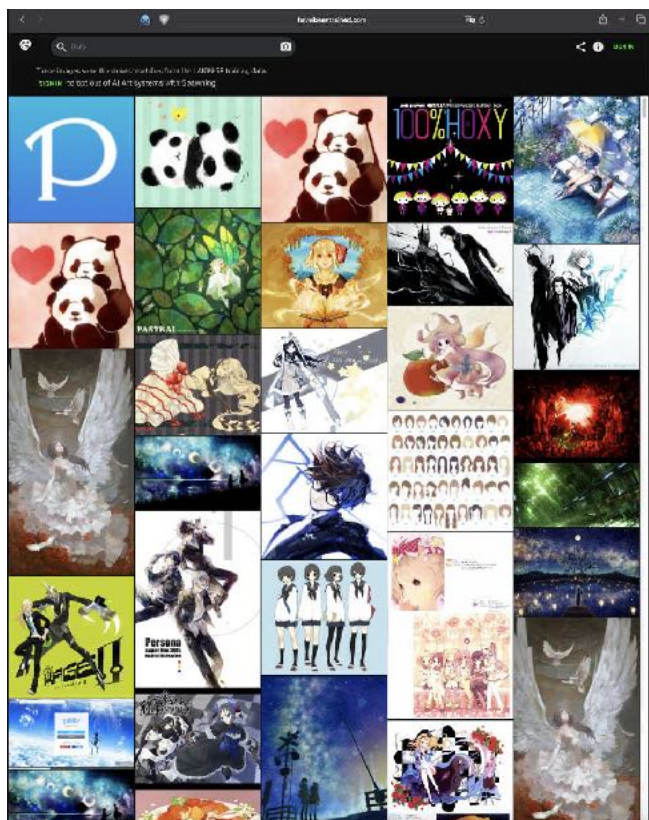
These are some examples of how image genAI pertains its training data, in which it's obvious how a genAI model can replicate/reproduce its training data.

Any originality produced by these models are not because it has any actual creativity, but because it's tuned to mix between different training data through random noise.

An unskilled person could simply type in a prompt like: "Painting in the style of [Artist's name]" or "Fantasy Novel" and get returned content generated from those potentially copyrighted Datasets.

This forces the authors of those original works that were used to compete with themselves. Exploited for training data.

It's also a blatant copyright violation, since so many of these programs and Apps make money off these unlicensed works.



The search term: "Pixiv" On Spawning's website
haveibeen trained.com

Showing many images in these training Datasets,
including LAION-5B
(Stable Diffusion's primary Dataset)

"Pixiv" is a portfolio site for illustrators, hosting
artwork images. Many of which are copyrighted.

Take an image genAI like Stable Diffusion for
example:

Stable Diffusion, made by Stability AI, currently
uses the LAION-5B dataset, composed of over 5
billion images. The entire dataset is available for
download for research purposes, but as I've
referenced above, the models made with it,
including Stable Diffusion have been used for
monetary purposes.

Without these mass amounts of training data, it's
currently impossible for any genAI model to have
any good qualities in their output.

A simple search on haveibeen trained.com -
Hugging Face's search engine for image genAI's
Datasets would reveal the extent of this problem.

This is a clear violation of the copyright holders'
rights. The fact that this many copyrighted images
in the datasets that was laundered in to end
products that are monetized is simply diabolical.
And I think the Copyrights Office must act.

You may also search real peoples names and
features and get a wealth of peoples selfies,
private photos and other non-consensually taken
data from the internet.

And there are so many potentially illegal and
unethical contents in these Datasets as well. But
for the purpose of this comment, I will focus more
on the examples of copyright issues relating to
art.

But it's also extremely dangerous if it's ever allowed to copyright genAI outputs, it would render the entire image copyright system meaningless. Since anyone could just pass a copyrighted piece of media through genAI and get a "copyright-washed" output, the possibilities of exploitation are immense.

2.2 Stealing/"Snatching" Art

Similar to Copyright-Washing, but it takes advantage of how the copyright system currently works.

Since a piece of artwork requires the completion of it and the registry at the copyright office. It's currently nigh-impossible to sue someone for misusing your work while you haven't finished it yet.

These are what I call WIP contents (Work in progress contents)

Rogue genAI users of genAI have already done this one year ago. Where a genAI user screenshotted an incomplete artwork live-streamed on Twitch, passed it through an Image-to-Image(i2i) program to "Complete" said artwork before the original streaming artist could finish the piece, and further accused that artist of stealing their work.²

Since the work hasn't been copyright registered yet (which is impossible to be registered since they have not finished it yet.) They cannot sue for copyright violation. Despite this being clear malicious intent.

This is very dangerous, and if the copyright laws and regulations do not catch up to protect artists and creators under these circumstances, genAI and its users would be a detriment to the creative industries.

² A.I. Is Exploding the Illustration World. Here's How Artists Are Racing to Catch Up <https://news.artnet.com/art-world/artificial-intelligence-illustration-spawning-2195919>

2.3 Fine-Tuning

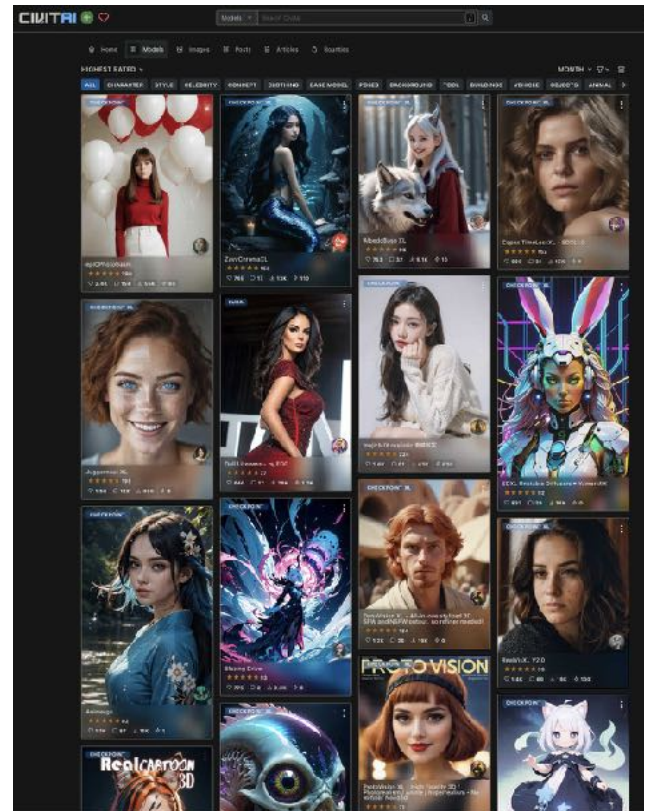
Fine-tuning is when a user or developer of genAI takes the above-mentioned genAI models and “Tune” it to a specific style or for a specific purpose. The model before that is called a pre-trained model.

For example, a creator and copyright holder could put their own images into Stable Diffusion(SD) to tune, creating a variant of Stable Diffusion that can recreate their style of painting.

But generating using that fine-tuned model, you will still require the base Stable Diffusion model and its training data to function. Meaning even though these copyright holders are generating with styles that mimic their own style, it still requires billions of potentially copyright-infringing materials to do so. This means even this use of genAI will violate copyright.

Further, there are these fine-tuned models for sale or distributed on many online websites, many of which use the unauthorized use of a specific artist's works to tune. Then they're used to mimic and potentially hurt those original creators. Thus forcing artists to compete with themselves.

There are sites that sell or distribute Fine-Tuned Models, namely: Art Station³, Fiverr, Facebook Marketplace, Petapi⁴, CivitAI⁵ and many more.



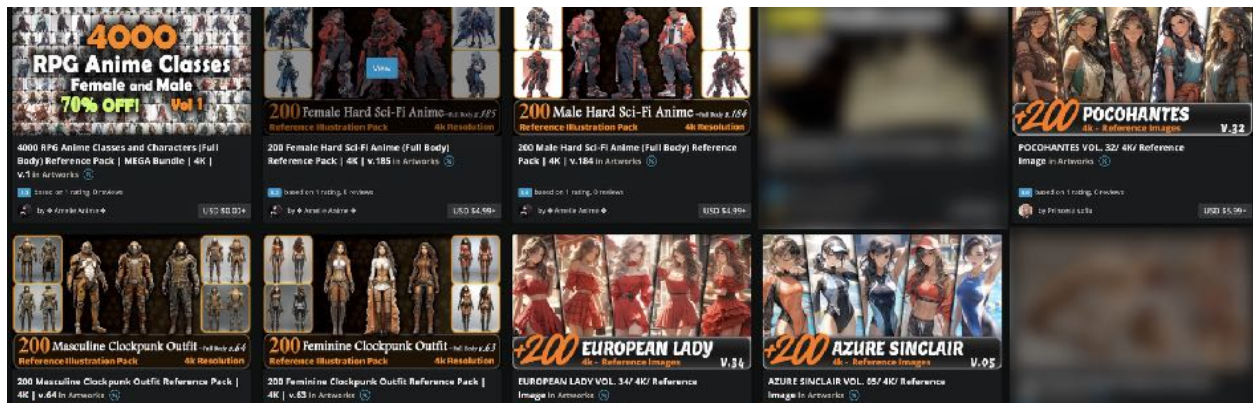
A screenshot of AI Fine-Tuned model sharing site - CivitAI

Pages upon pages of these fine-tuned models trained with unauthorized used training data, being distributed.

³Artstation Marketplace: <https://www.artstation.com/marketplace/game-dev/>

⁴LoRAモデル作成者・プロンプト作成者にも収益還元される、AIイラスト投稿サービス『petapi（ペタピ）』をリリース - <https://prtimes.jp/main/html/rd/p/000000056.000057964.html>
(Title Translation: LoRA model Maker, prompt maker can get monetary gains at this AI illustration site that just released: Petapi)

⁵ CivitAI - <https://civitai.com/models>



A Screenshot of site Artstation Marketplace

Without even searching, right at the front page you can find most of the items for sale generated by AI. Which are all generated from & Fine-Tuned to specific styles. Trained with unauthorized and copyrighted works.

The same is true for voice actors too, models that mimic how a voice actor sounds without authorization or consent are being made. Forcing voice actors into competing with their own voice.

I consider all of this as gross violations of copyrights, and would like to see all of them punished for this crime.

Section.3 Actions and Stance I Urge the Copyrights Office to take

First and foremost, I believe these blatant copyright violations must be stopped, Mass unethical data scraping should be considered a violation of copyrights, and the copyright office should help in setting a legal precedent in this matter.

This should be done both for the protection of creatives as well as for privacy.

Thankfully, the copyright office has done a great job of preventing these by declining the submissions of AI-generated content. And I truly believe this is a move in the right direction.

3.1 What the Copyrights Office Could Improve On

In a world where artists and creators could create hundreds to thousands of images per year, and all it takes is a click to upload to the internet the copyright office should have a method of speedy copyright registering option. The traditional route is too slow and does not fit the requirements modern-day artists and photographers have.

More so, I believe there should be laws and regulations that provide the authors of copyrightable works automatic protection when a work is being created.

This will give Work in progress(WIP)contents (mentioned in Section 2.2) and other works that have not been registered yet protection from being stolen or snatched. (mentioned in Section 2.2)

3.2 Regarding Copyrights for AI-Generated Contents

Secondly, AI-generated content should never be copyrightable, even with licensed training data, the copyright should still belong to the respective authors/copyright holders, for genAI is essentially only a derivative machine. If the derivatives can have full copyright, then the originals will have no value.

Closing statement

Any technology is prone to misuse. But I believe that if we put humans at the core of every technology, then and then only can we use it for good. I hope the copyright office keeps the creatives' interests and by extension the value of human creativity at its core.

I am very grateful for this opportunity to comment on the state of genAI and looking forward to seeing changes and improvements led by the Copyrights Office.

Sincerely,

Shuwen Li