GENERATIVE AI STYLE TRANSFER PROBLEM AND 4 PART SOLUTION

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ML Models

Machine Learning models are excellent at some tasks: defect tracking in product manufacturing, "conveyer belt" quality control for parts manufacturing, food production quality control, item sorting, defect recognition, real-time object avoidance.

Generative AI

However, Generative AI is more than pattern recognition. Machine learning models and associated Generative AI software are capable of generating derivatives, variations of molecules, variations of protein structures— in order to predict and find optimal solutions. Analytical tasks that otherwise would take years of human work.

Style Transfer

Generative AI models and software together are capable of representing distilled style elements. Style elements of a individual artist, can be used by Gen AI software to create a derivative work. A derivative work that looks like, sounds like a certain artist's style- but was never made by the original artist. A original artist never derives any income from such a derivative work. Software using a certain 'style' of a specific artist can enable a unskilled user to transfer a style into a new derivative output. As a proof of concept, there is nothing wrong with proving style transfer is possible. Examples of style transfer include: Outputting music that sounds like Elvis, but such music was never written, performed or recorded by Elvis. However, Style Transfer in audio recordings is way past the proof of concept stage as Audacity and a 3rd party plugin named Riffusion exist to specifically create output. And no royalty is returned to the music publishing house nor original musician. While this technical capability is in it's early stages— the path where Style Transfer is leading is obvious- artists, musicians and authors being left outside emerging income streams or even worse derivative works given away or generated for free.

You can prompt ChatGPT to "Write for me a story containing character names of Harry Potter and his friends." The output of the derivative story may contain original, recognizable Harry Potter character traits, potentially elements of original arc of story- make a painting, drawing, image in the style of. Style Transfer is a serious, emerging economic income problem for original creators. I am not suggesting Harry Potter's author (specifically) needs more income. I am explaining that ALL authors should have a formal, enforceable right to NOT have their works included in unlicensed, unapproved derivatives. Such derivatives potentially erode original author market share. Market share many authors have because they invested years, personal money, real human creative time to create original works. While some person who has not given, made or sacrificed any investments, nor even has the creative skills— suddenly has a look-alike, derivative work created for nearly no cost.

Any economic market, has a limited number of customers. When customers can create their own products based on the style of a existing author- what is the incentive to purchase a author's original work? Existing popular authors lose income, average authors lose income. People who are good writers, but only write 1 sellable book a year, lose income. Loss of income

to authors, musicians, play-writes, artists— means millions of real people cannot pay their mortgage, their car payments, put food in their refrigerator for their children. Ultimately this is the problem with enabling Style Transfer on a wider scale. Style Transfer puts good, honest creators outside of economic value chains, economic markets. Style Transfer "robs" original creators of potential income.

FOUR SOLUTIONS TO THE STYLE TRANSFER PROBLEM
The solution to the emerging Style Transfer problem contains four elements:
!) RECOGNITION by artists, writers, musicians that Generative AI Style Transfer is not going away. Gen AI Style Transfer as a feature of software is likely to scale larger, becoming available to greater numbers of people, enabling less skilled persons to prompt the generation of numerous derivative outputs in texts, images, sounds, music, computer source code.

2) Authors, artists musicians need to **CREATE THEIR OWN MODELS** of their own works. By training their own ML/AI models, digitally signing the models, officiating the models and publishing, licensing, selling the models for a fee. In this way, creative persons that now generate income from selling their traditional works will still participate in the new income stream- that OpenAI and others are developing.
Creative persons who take control of their style of their brand, officiate their own Style Transfer models- win back their style from upstart corporations who would otherwise profit from artist's existing catalog of works. Creative persons who participate in controlling how their models create derivatives of their works will lead and have some control of their income stream. Instead of sitting back and complaining that they cannot do anything about Style Transfer. Creative persons can train a ML model on the catalog of their works, author, publish and sell/license their own (official artist endorsed) ML model on existing platforms- thereby generating new streams of income for themselves.

3) SERVICE PROVIDERS PARTICIPATION.
Service providers and e-commerce platform providers such as Apple iTunes Store, Google Play, Audible already sell music and books authored by authors and musicians. The same platforms could sell "official", signed, officiated AI/ML models created by a author or musician. A purchasable, downloadable model, purchasable and downloadable just like a book or song. The model locked to the one purchaser's device plugging into a existing or new software app. Each new derivative work created on a customer's device could generate a small fee, or a monthly service fee for using the capability of generating new output in the style of a user's favorite artist, musician, author. In this way, the original artist, content creator stays in the economic loop, participates in the marketplace and has some control over works derivatives being created. A similar contractual, ML model licensing method may be possible for studios and publishing corporations such as: Apple iTunes Store, Google Play, YouTube, Spotify, Amazon Books, Audible, Apple TV, Netflix, Amazon Prime, Disney, PiXAR, HBO, Paramount, Sony, Universal, Warner.

4) UPGRADE, UPDATE TITLE 17.
Authors, musicians and other creative persons need to write and tell each of their elected US Representatives to sponsor and pass legislation adjusting, updating Title 17 US Copyright Law to provide for "opting out "of allowing a work to be used in machine learning model training without author's written consent. Specifically, in the copyright registration system e-co, when a copyright is registered, as part of the workflow, provide a check box to formally declare that this author, musician 'opts out' of having his or her work(s) used in the machine learning model

training process without his or her written, legal consent. The works creator then achieves a legal foundation in controlling who makes ML models based on the author's work(s). Secondly, in the publicly viewable copyright record, a note explaining- 'Original author opts out of agreeing to having this work used in machine learning model training, unless otherwise approved by the author as written, agreed, legal consent.'

End of Style Transfer problem definition and four part solutions.