Artsy Interview

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September 2018

Who owns the artworks made by an algorithm? How should they be attributed?

From a practical standpoint, it seems to me that if the algorithm is proprietary and kept secret, it would be easy for its creator to retain ownership. If it's open source, or the program is easily replicable, might it instead be the person who clicks the button initiating the program who owns the work? Is there — or could there ever be — a case for an AI owning its own work?

Absolutely, I agree that when it's proprietary it is more straightforward. It gets more hazy when open source models written by computer science researchers and public domain datasets are being used. This can lead to fairly homogenous looking work, but the concept underpinning the work is what is owned by the artist. In my piece 'Closed Loop' this is how I worked, using two open source models and finding something poetic and interesting which the scientists didn't originally intend - in this instance, getting them to converse. I find there's a lot of rich territory to be explored within the mistakes or disregarding the practical objectives and limitations which the scientists are working with.

Of course the ownership then becomes difficult: in my piece I set the algorithms off on this unresolvable mission (which wouldn't have happened without me, the artist), so therein lies the hand of the artist. This required me to write a program which feeds the output of one into the input of the other, making them converse, and another program which sits on top to view the final product. The original authors of the papers used deserve recognition, but the artist re - contextualises it as art, which in many ways is similar to the readymade.

In terms of the agency of the artificial intelligence, the AI does come up with outputs I couldn't predict. This takes away from my agency, but is also what I find interesting about the piece as I chose to never curate or edit the given outputs. I don't feel there is a case for the AI to own its own work yet, but it's an interesting concept to speculate on, one which boils down to how much intelligence and creative autonomy it requires to acquire ownership (and pulls into question whether we are too wrapped up in our notions of human consciousness).

Are you familiar with the case of David Slater vs Naruto? Might it have implications for AI art ownership?

A US Appeals court debated whether David Slater or a crested black macaque owns the rights to photographs the monkey took when Slater coaxed it to press the shutter in 2011 in Sulawesi, Indonesia. Wikipedia and Techdirt refused to stop using the images when Slater asked them to, saying the monkey created the images, not him. (PETA

went on to sue Slater for the copyright on behalf of a Macaque named Naruto). The US Copyright Office ruled that animals can't own copyrights, so it seemed the images were free for anyone to use. Ultimately Slater won rights to the photo, on the condition he give 25 percent of future revenue to charities protecting the monkeys. Might AI artists have to fight the same battle in the future? Why, why not?

It's definitely an interesting and concrete comparison. I believe it does have quite a lot in common and similar questions arise when discussing an artificial intelligence. On the one hand these are algorithms which have been written by humans, but if you open up a deep neural network it isn't humanly possible to decipher how it has arrived at a certain weight or picked out a certain feature in an image. Therefore it is operating with some level of autonomy. John Searle argues that even a stream running down hill is making decisions: so for all intents and purposes it has some level of consciousness, therefore the AI may deserve some ownership. What an artificial

intelligence would do with that recognition or ownership I do not know. But I suppose the concept of ownership is inherently human, speaking to our own sense of self - I do not know if this is, or will ever be applicable to a non human entity. It may become more of a pressing issue as these technologies carry on developing at an alarming rate, and challenging what we think we know about our own cognition, creativity and sense of self. But perhaps we should ere on the side of caution as we do not want a resentful super intelligence in the future after having treated them as slaves, as is argued in Donna Harraway's 'A Cyborg Manifesto'.

Who gets paid for AI art? Is it the usual gallery model — the artist (the human who creates the AI algorithm and directs and selects its works) takes 50 percent, and the gallery takes 50 percent? Or something else? Is there a case for AI art having a different revenue model? What would it be?

It is such early days and as yet there is no rule book, which makes it an exciting place to be. I'm happy to leave it to the art market to iron out some of these problems. But in my experience the conventional gallery model still holds, similarly to selling a piece of conceptual art or video art. I suppose issues of preservability and archiving become very important when working with technologies which are so rapidly being outdated and changing, so it may become a fairly technical exercise on the side of digital preservation.

How does the relationship between an AI artist, the author of an algorithm, and a gallery function? It seems the author of the algorithm serves some of the functions of the gallery — choosing which of its creations are most interesting and viable for the market. How do you see the relationship evolving?

In my work I decided not to curate the output at all, allowing the two artificial intelligences to converse with each other in

a feedback loop: one which has been trained to recognise images as sentences, and the other which has been trained to generate images (from scratch) from sentences which are given to it. So in this instance the question is not so applicable as I had no influence over either the images or text being generated. Although I suppose the concept itself is where the market value lies.

What are the maintenance/archiving issues if any for AI generated works?

Well, it strikes me there are many. As it is such a fast evolving area the technologies underlying the works which allow the algorithms to run are constantly being deprecated. As an artist I do not want to be responsible for constantly going back and updating the hardware or software every time the piece is exhibited. This will require smartly packaging the work on a machine which is purpose built for running the artwork, a machine which will be possible to clone in the future possibly containing encryption to only run for the collector

possessing a COA. Although in general, these issues have been grappled with and, to a large extent, become well understood through artworks that involve software and computer-related hardware.

One simple way I have bypassed maintenance issues so far is by selling the work as a very long and seamless video loop, which as a recognised format, is less anxiety inducing for the collector, gallery and myself. Of course it is no longer an infinitely live generating piece, but instead a recording of a performance given by the computer which still contains surprises and gives the desired effect.

It seems to me an AI artwork could be plagiarised is several different ways: by directly copying an output (especially a digital image/video), by copying an algorithm's source code (hacking, reverse engineering, etc), or by copying the same source inputs. On the other hand, "original" AI artworks could be criticised for using copyrighted material if it doesn't sufficiently change or critique

the original — i.e. not satisfying some version of the fair use argument. What do you see as the most challenging issues regarding copyright infringement and AI art? How do you protect your IP as an artist?

Again a very interesting question which I do not yet have a clear answer to. I feel its important however that artists do not get too bogged down in these issues to allow themselves to creatively explore and try things out, similar perhaps to how hip hop artists use sampling.

Of course sometimes the datasets may contain copyrighted images, but once the model has been trained the images are no longer directly referenced, they only exist in remnants as long strings of numbers and features the model may have pulled out. Currently datasets of images, or sounds, or whatever media you may be using for a GAN have to be very large (eg. containing millions of images), so it is unlikely that one of those discarded training examples will be discernible in the output. Although as these

models evolve and get more powerful, allowing for smaller datasets, there could be interesting instances where it much more closely refers to copyrighted material at which point this question may need to be revisited.

I'm less concerned with others 'copying' the output as this is a similar concern for any form of art, and sharing online is how artists, or even a new movement, builds recognition.

I do not train a large number of my own models, however artist Mario Klingermann is constantly creating his own, and I know he feels strongly about protecting his models from the public domain, as it can be infinitely run and used to indiscriminately create his work.

Copying the same inputs and training a new model is perhaps the most profound question; the conceptual part of creating AI artwork can come from what dataset you choose to use and why. This theoretically could be stolen, however if you don't know the exact hyper-parameters used by the artist to train the model you will not be able to recreate the work, and even if you were able to set it off training in the same way it still will not be able create something exactly the same due to the unpredictable nature of deep learning.

Who buys A.I.-generated artwork? Are they typical 'art collectors', or techie people who have never bought art before?

Again it's possibly premature to say. But I did feel the opening of 'Gradient Descent' at Nature Morte (Dehli) did seem to attract a much younger, more techie generation of new collectors. One collector of mine has large screens on all the walls in his own personal home where he displays his private collection of new media art, proving to me that there is interest beyond museums.

Given the concentration of wealth in the hands of tech giants, is there a risk that the biggest art commission of the early 21st century will be given to algorithms instead of artists? Wouldn't it serve a Google or a Tencent to say that their beautiful art came from their own genius programs, instead of people? Mike Pepi writing for Frieze says AI creativity is propaganda for corporate interests (even if artists get paid along the way). In fact, isn't AI art a perfect candidate for corporate art, replacing the big bronze in the forecourt, the huge abstract oil painting in the open plan office?

An interesting thought, although I do feel it will require an interesting creative thinker to be collaborating with the AI to create anything worthwhile. At the moment a human/computer collaboration is still required on some level, and possibly it will always lead to richer results (in the same way cancer diagnosis is currently most accurate when done collaboratively using machine learning and a human expert). If left just to computer scientists to create algorithms for large corporate or public art commissions, I do not think it will result in particularly interesting or thought provoking work. It would most likely be very generic/homogenous work as scientists are thinking in a different way - in terms of aiming for the

most logical outcome. Artists have a different way of thinking about it, considering which are the interesting questions to pose, and perhaps branching off in collaboration with an AI down some creative tangent. In which case it's definitely a good area to be working in as an artist.

Does the creator of an AI algorithmic artist enjoy any indemnity when it creates obscene — violent, pornographic, neo-nazi (e.g. Microsoft's Tay), or politically sensitive works (e.g. pro-Taiwan, Tibet or Xinjiang in China)? Should they? Or is that a kind of negligence on the human artist/programmer's part?

I strongly feel that pointing out biases and political/ethical problems with technology is one of the roles of the artist. Artists have always been in a unique position where they can stand outside systems and are then able to comment on them, hopefully engaging new audiences rather than confirming existing prejudices. I especially feel this with artificial intelligence, which is going to have a huge impact on us even if

we do not yet - and may never - understand exactly how. So it is more important than ever that artists, as well as people from other disciplines, enter into the conversation and take their role to encourage discussion seriously. Also to provide alternate - even utopian - visions for the future and to avoid misunderstanding and scaremongering. Lastly in response to your final question, I feel that if someone is creating obscene work whilst enjoying an indemnity, and they are not critically presenting what they are doing or considering what the message of the work is, then they are not really playing the role of an artist.