

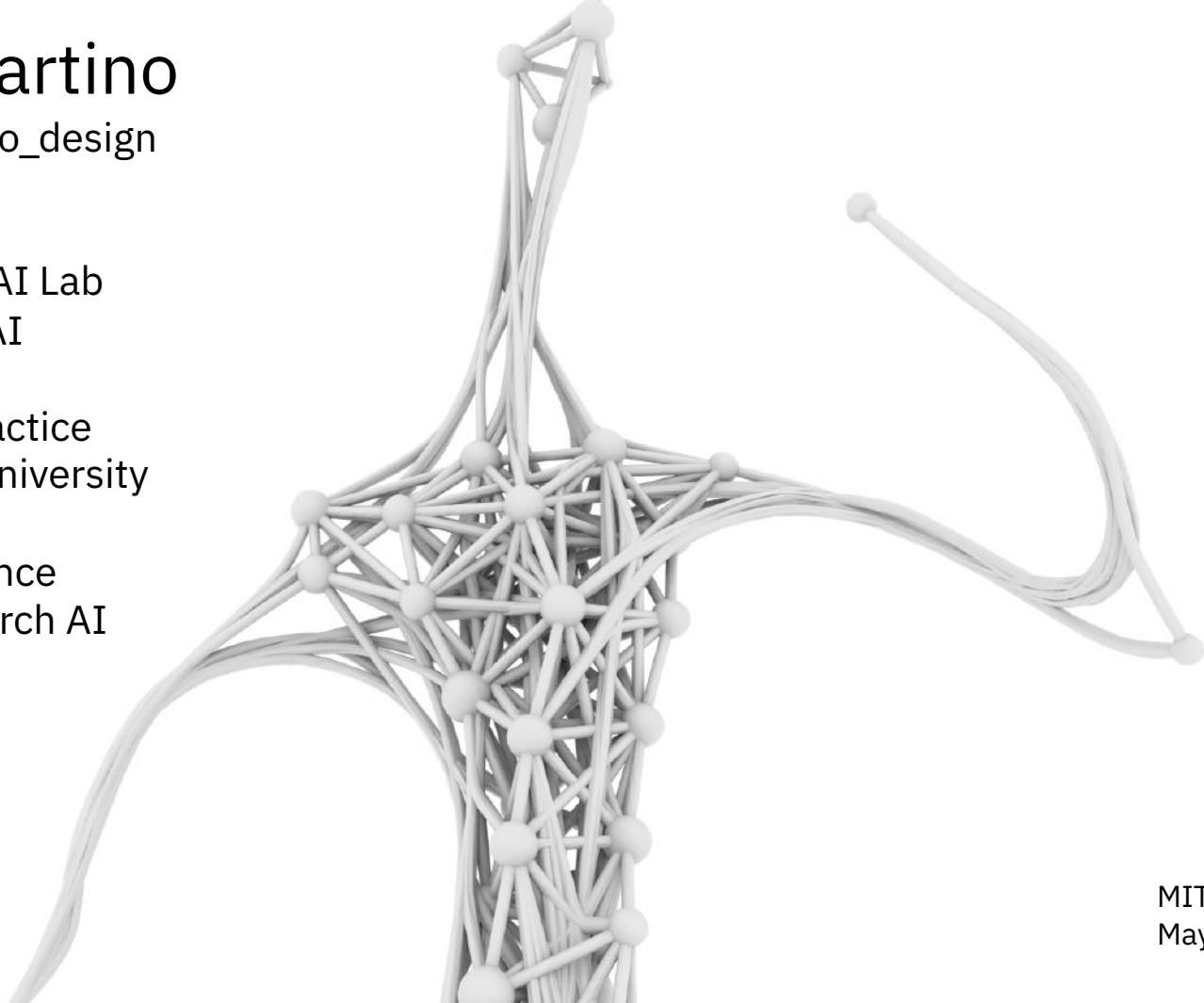
# Mauro Martino

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IBM Research AI

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Northeastern University

Artist in Residence  
MIT-IBM Research AI



MIT, Cambridge  
May 31, 2019

Art + AI = ?

Art + AI = FakeArt

Art + AI = RealArt

Art + AI = New Artist

Art + AI = **Tool for Artists**

Why so much interest  
in the art created by  
the AI

What can AI do that  
artist cannot?



Human Study, 2004-2017  
Patrick Tresset

Patrick Tresset  
Human Study 2004-2017



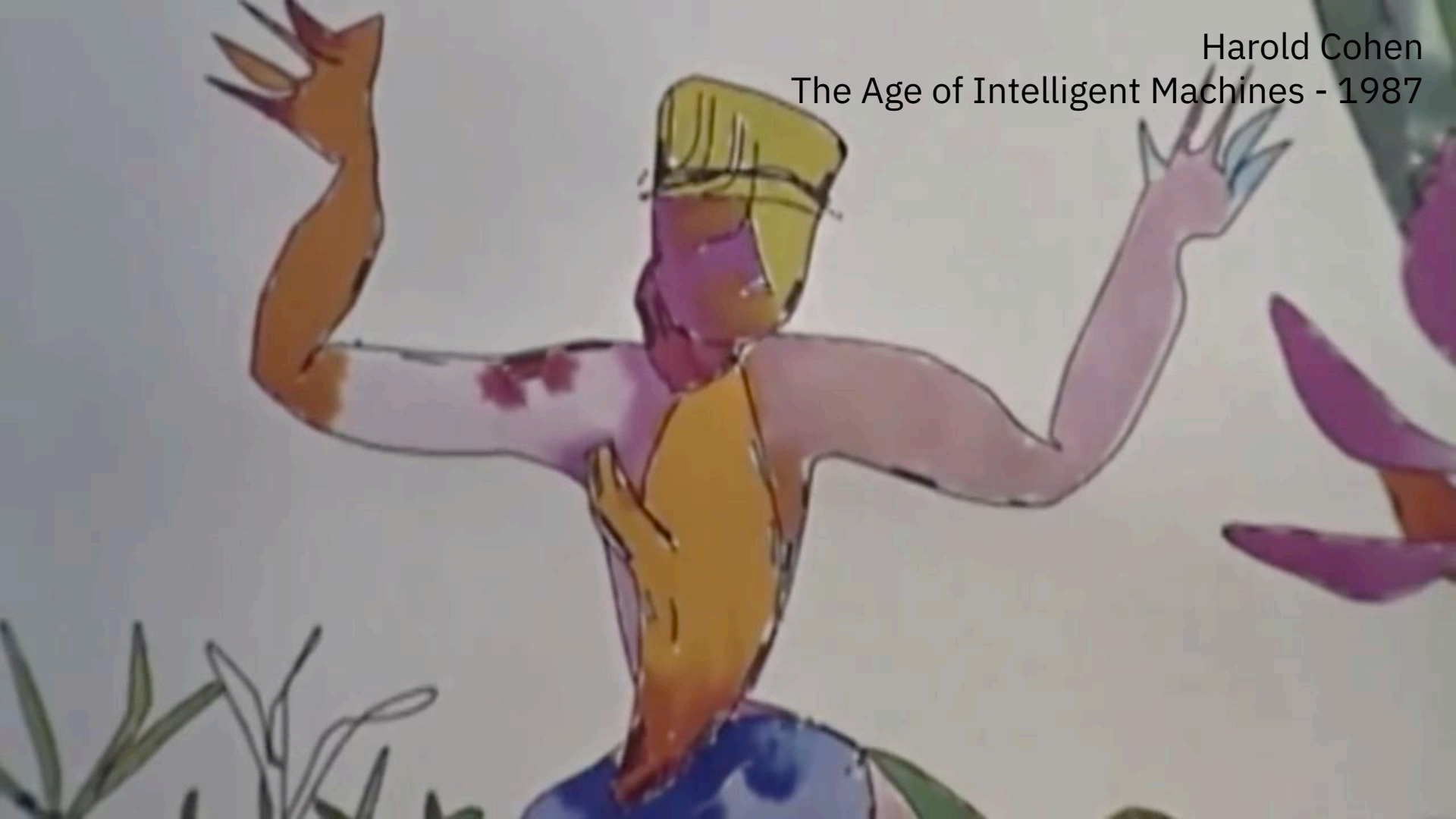
They are only machines, and we see them as different.

In our example from Tresset, the robots always **look at the paper**.

When the machine **looks at you**, you really think, that something looks at you.

They hesitate and they look a bit **fragile** and **clumsy**.

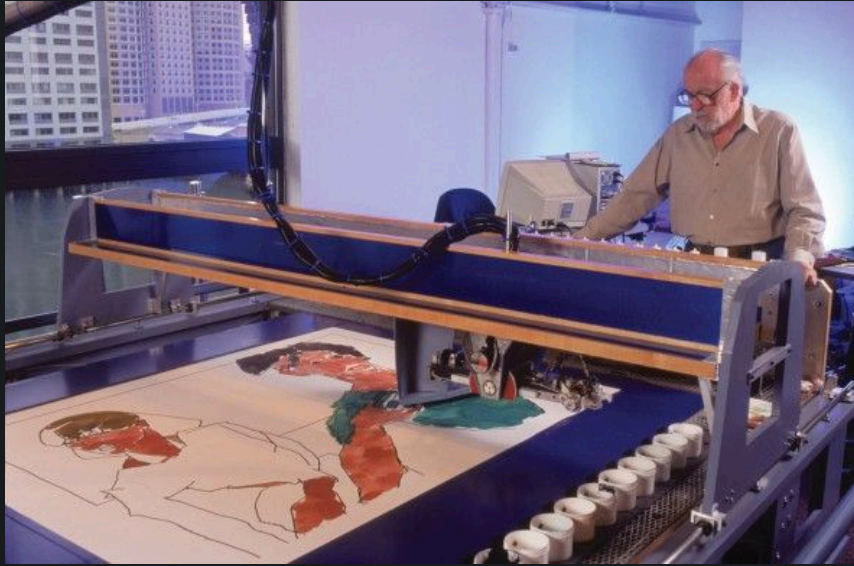
Harold Cohen  
The Age of Intelligent Machines - 1987





“I will be the first artist in the history  
who can have a post-human exhibition  
of new works.”

Harold Cohen



AARON, Harold Cohen is not a artificial intelligent software, it is not creative and is not able to learn.

AARON is simply following procedural instructions and that the real artist behind each piece is AARON's creator, Cohen.



graphics, paintings and sculptures

# Sketches – AI Art without GANs

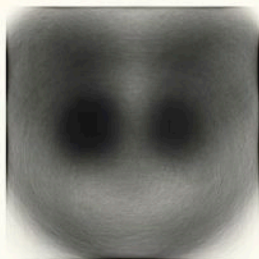
<http://formafluens.io>



During the Renaissance, the importance of *pentimenti* was recognized as a means of discovering the natural, dynamic change in artistic vision in paintings.

***Pentimento*** is the action of changing ideas and perspectives, but is also a method to find the “movement” and to represent it.





panda



cat



car



alarm clock



Mona Lisa



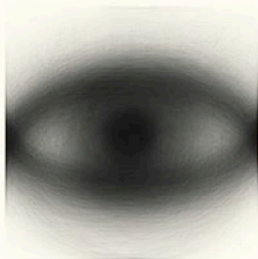
face



moustache



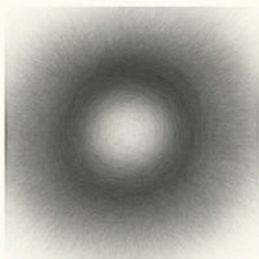
pineapple



eye



mouth



sun



bicycle



apple



pear



rain



umbrella



television



skull



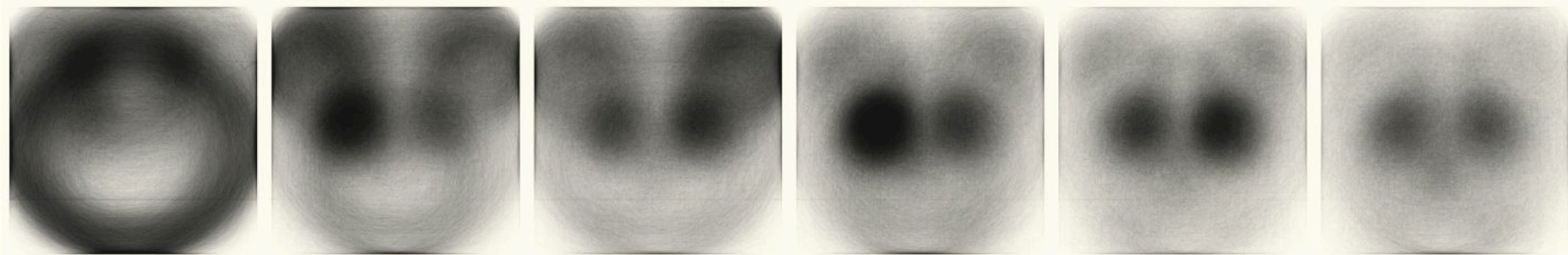
owl



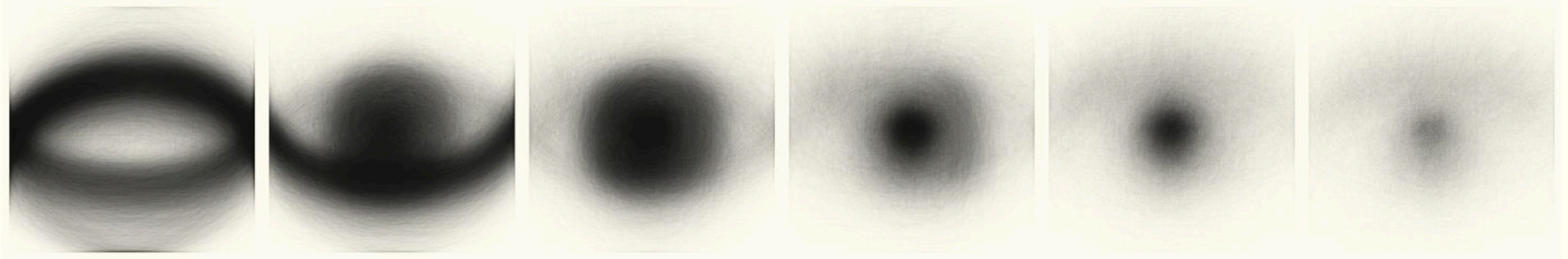
strawberry



teddy-bear

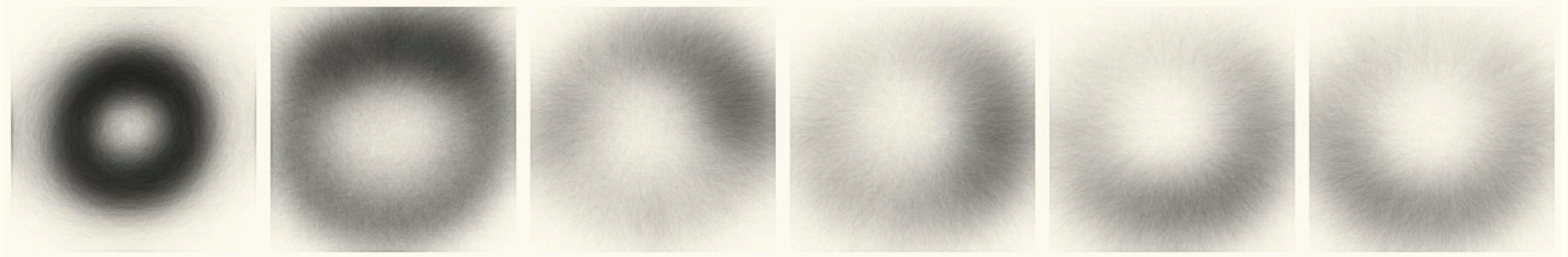


Time sequence on how 113,508 people draw a panda.

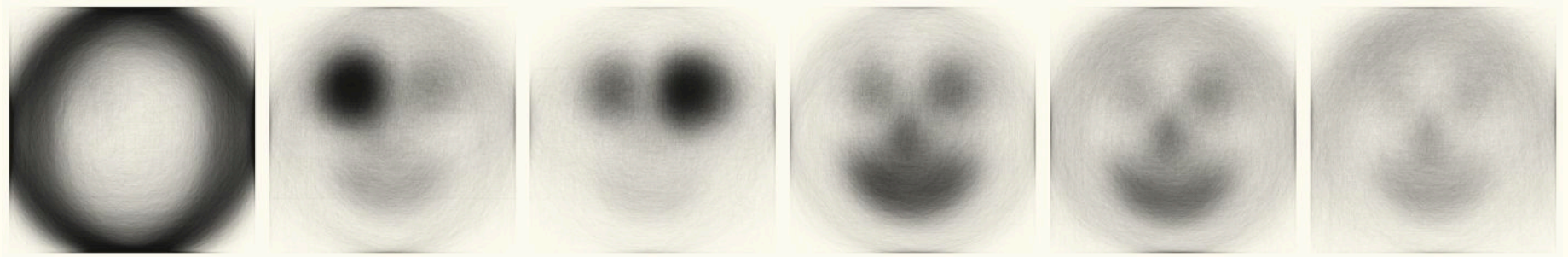


Time sequence on how 125,795 people draw a human eye.





Time sequence on how 133,676 people draw the sun.



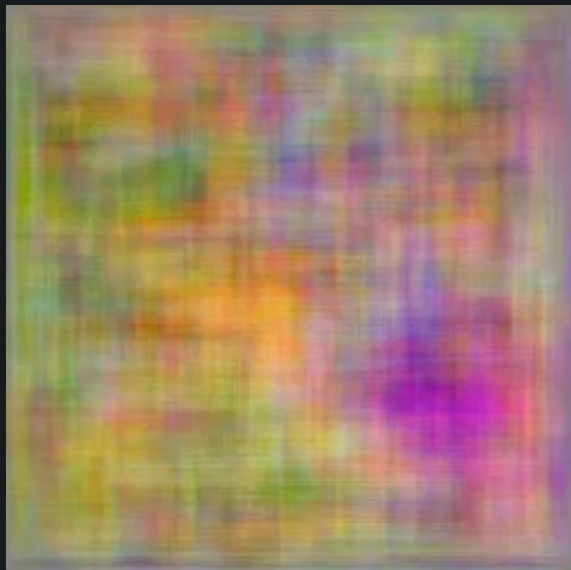
Time sequence on how 161,515 people draw a human face.

We draw objects in the same way, and even with the same sequence of movements.

# Graphics

## AI Self Portrait

*The New York Times on October 19th, 2018*



Epoch 0



Epoch 1



Epoch 2



Epoch 202



Epoch 269



Epoch 307

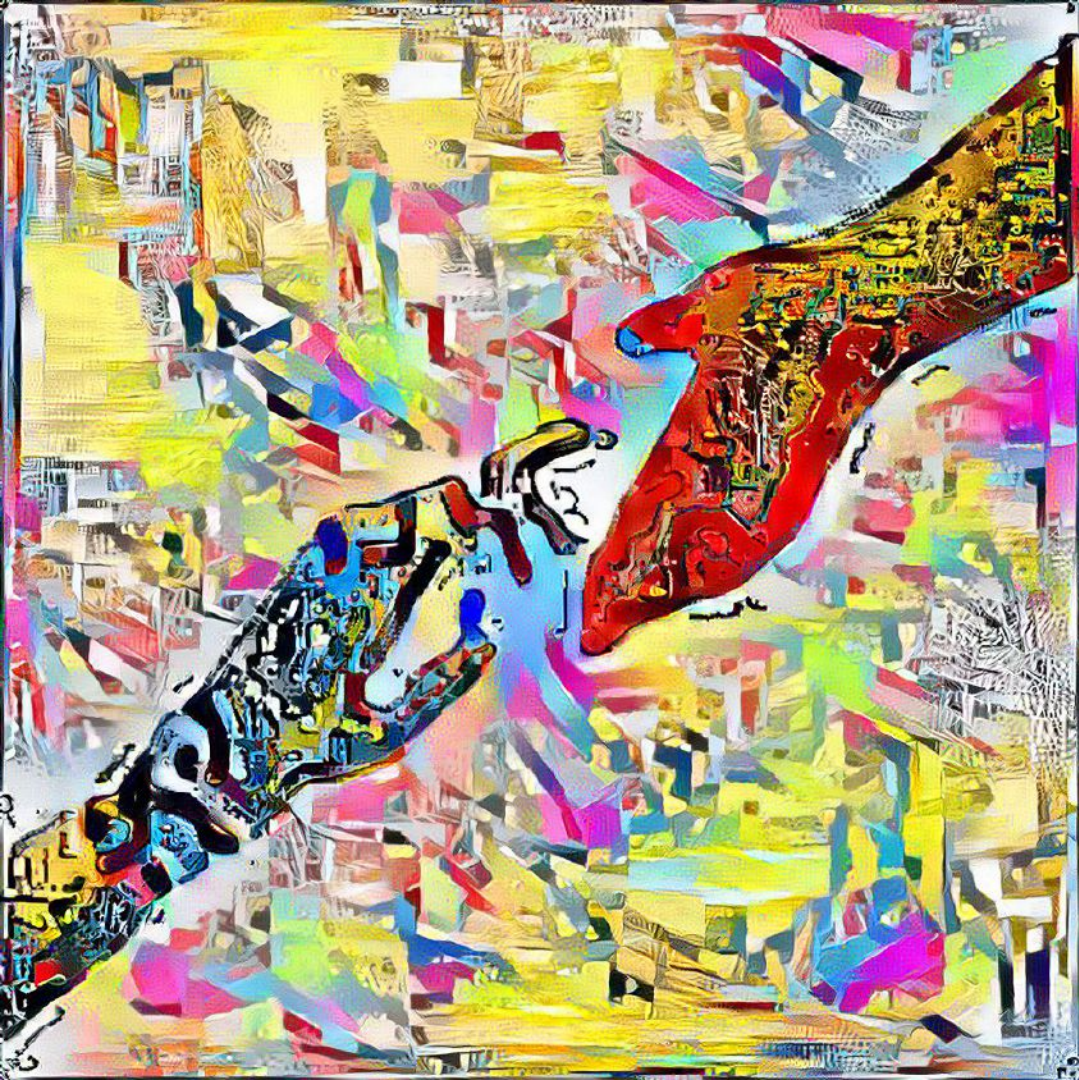










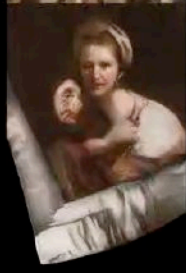
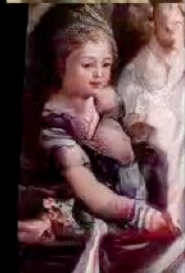
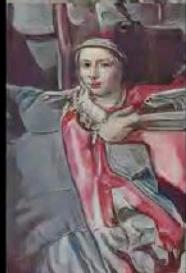
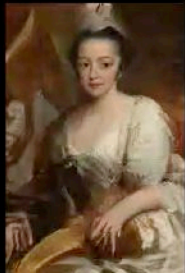
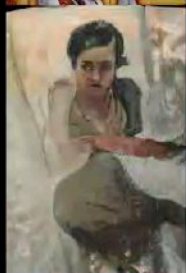
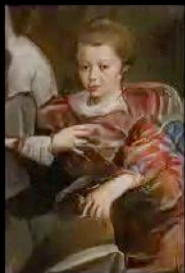
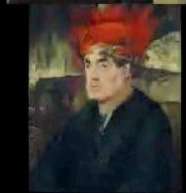
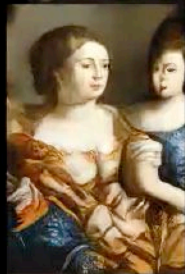
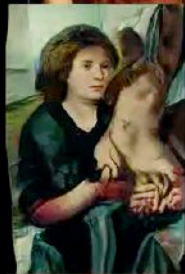


Identify a core **visual concept** in AI (through natural language processing and visual recognition), create an **original image** that captures such AI concept (with GANs), and present it in a way that fits a **visual style** (with composite neural style transfer).

# Paintings

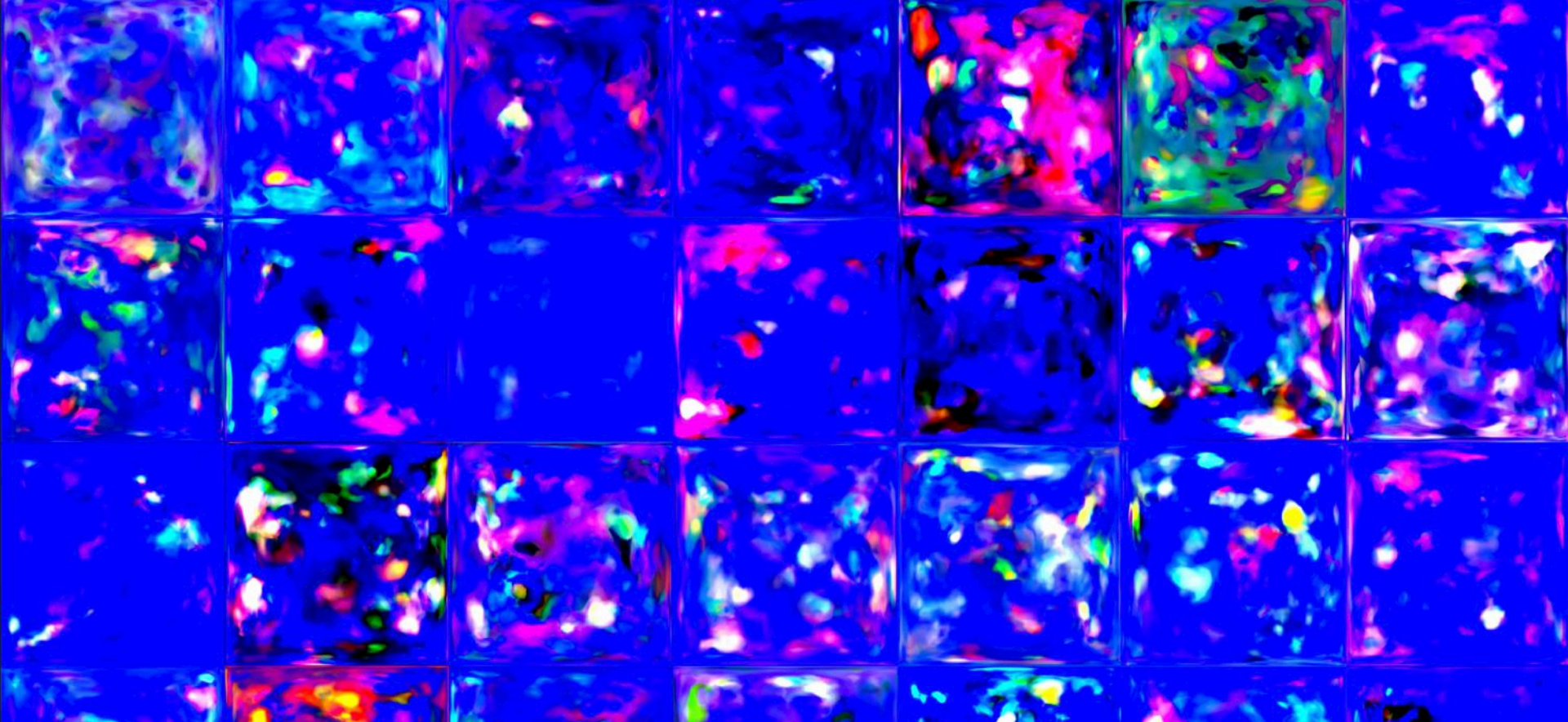
<https://aiportraits.com>



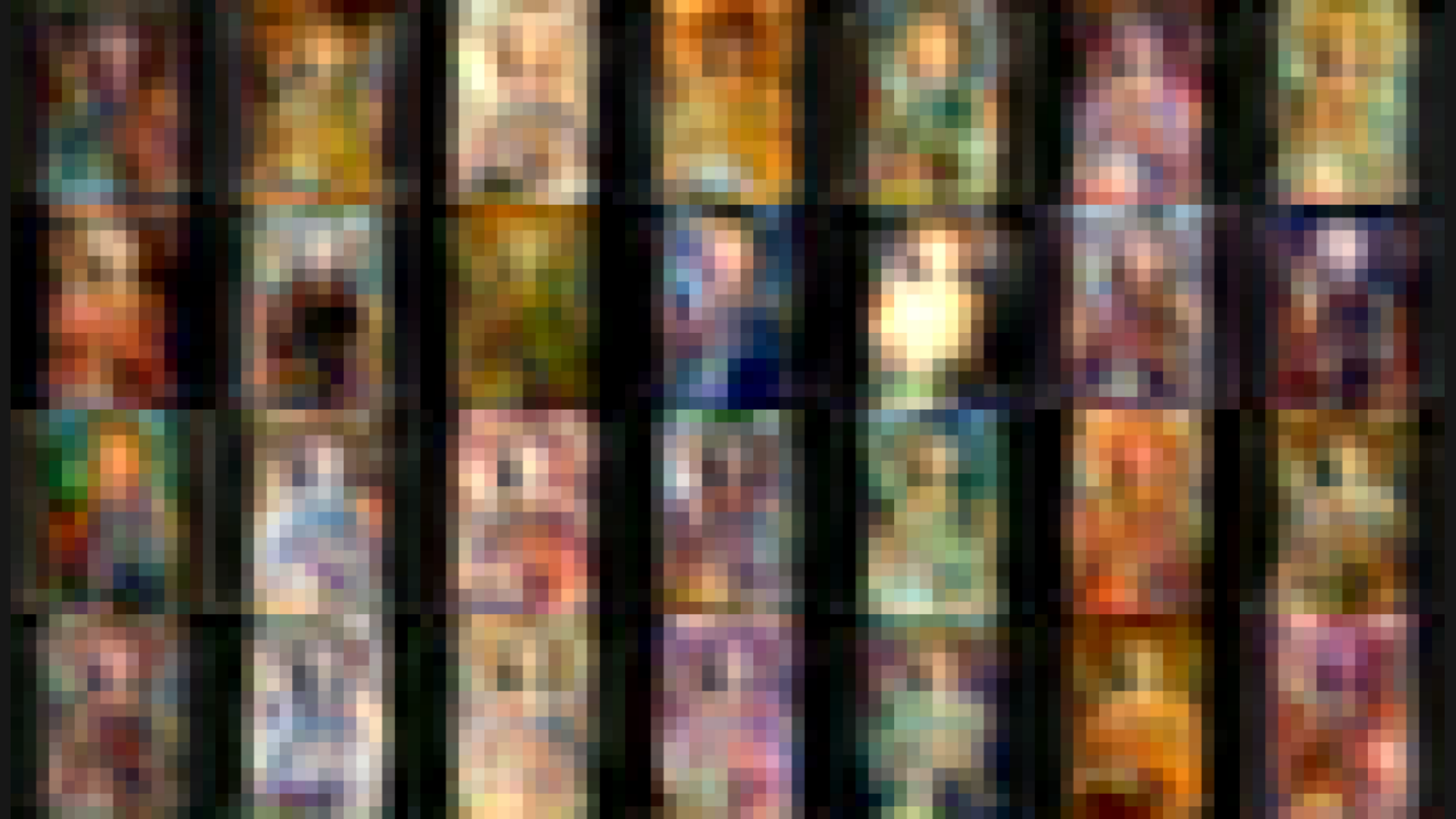








The beginning of the learning process is the most fascinating, it is the Big Bang that starts everything, the explosion of every possible form.



# Painting

Painting is self-discovery.

Painting makes the invisible visible.

Painting allows us to see the world with other eyes, and to connect with a different way of seeing.

# What is real and what is fiction?

AI Portraits is trained on millions of photos of actors and actresses.

We are using the faces of people in front of the camera to activate portraits with our GAN.

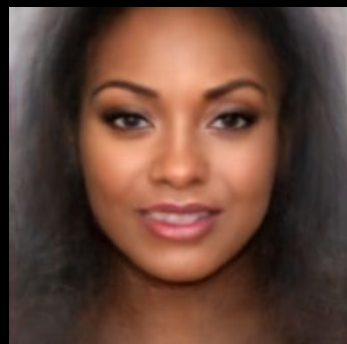
The result is an image that examines the concept of identity, pushing the boundaries between the individual that recognizes himself and the collection of faces from the society of spectacle that are sedimented in the neural network.

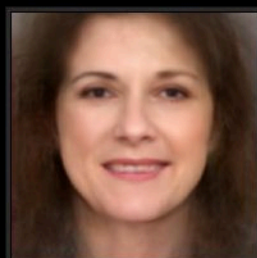
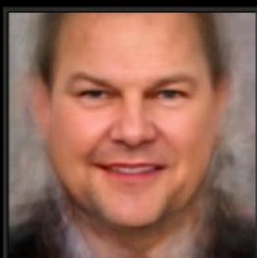
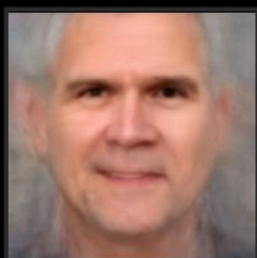
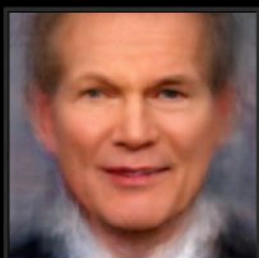
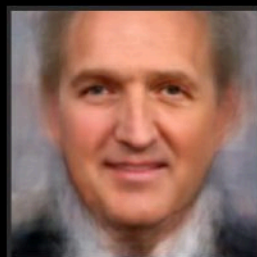
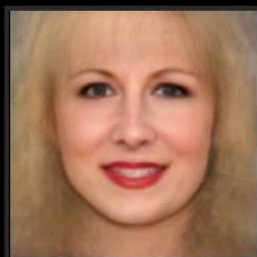
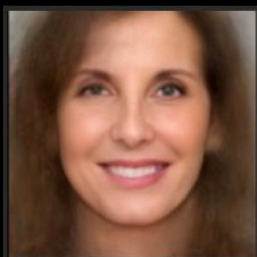
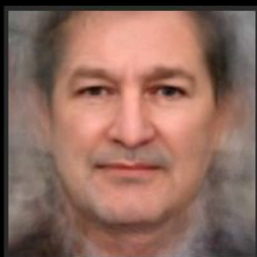
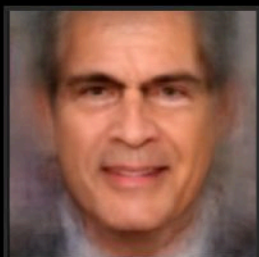
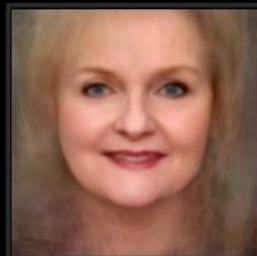
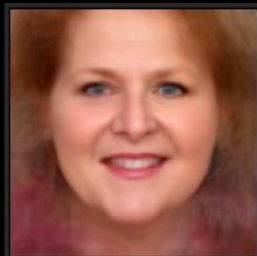
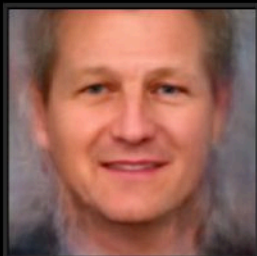
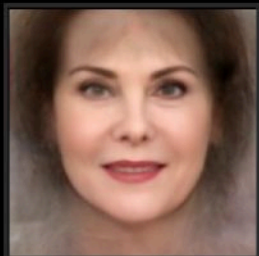
What I see is myself? It is a fictitious re-creation of myself, the training data of the actors vaporize my image and create a dialogue between me and the celebrities.

We see a cinematographic self, independent and separate from my actual self.





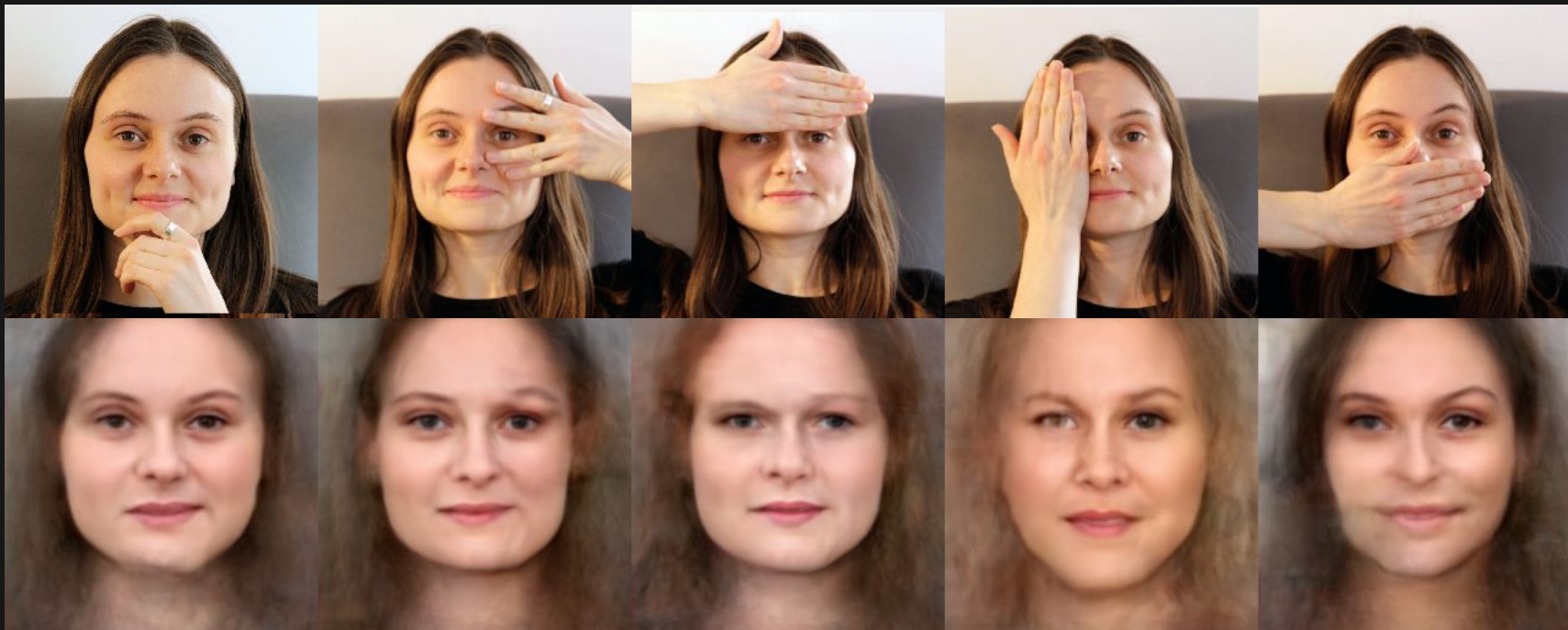








Below we can see how AI Portraits reacts to different poses:



AI Portraits continues to generate a frontal close-up by reconstructing the missing parts of the face.



Head turns from right to left.





The head moves up and down.



Strange feedback from users:

I found something interesting...

I uploaded a picture of *sonic 3* and AI saw an Asian woman in the picture...





Input



First result from AI Portraits

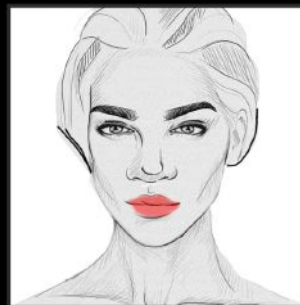


Second result from AI Portraits

Other results  
obtained by  
playing with Ai  
Portraits in an  
original way.

Left  
Input

Right  
Output





Andrea del Verrocchio



Giambologna



Michelangelo



Auguste Rodin



Polykleitos



Phidias



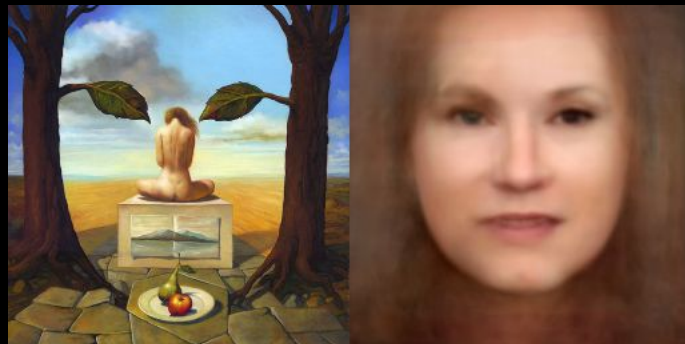
Scopas



Lorenzo Ghiberti



# Salvador Dalí





# Amedeo Modigliani



# Amedeo Modigliani



# Pablo Picasso



# David



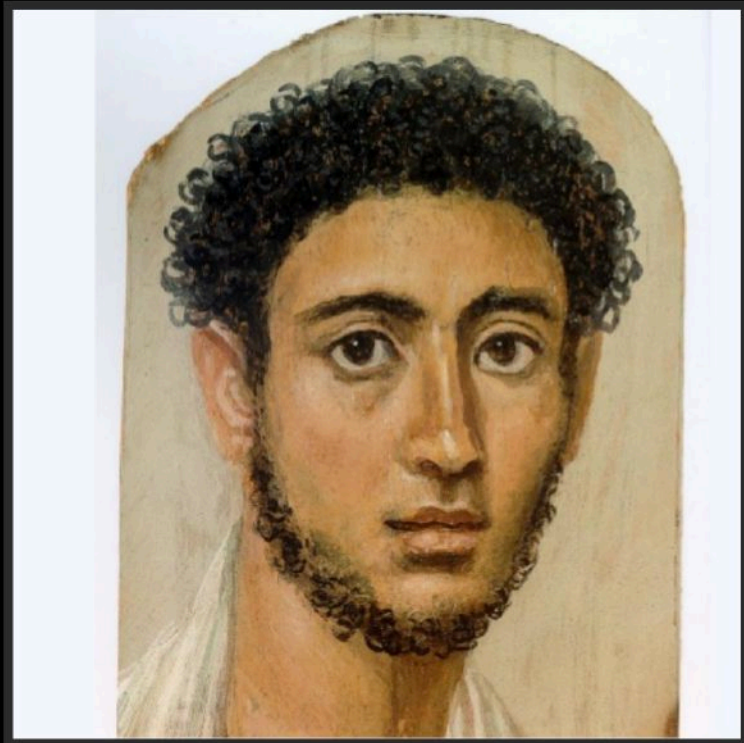


# Nefertiti



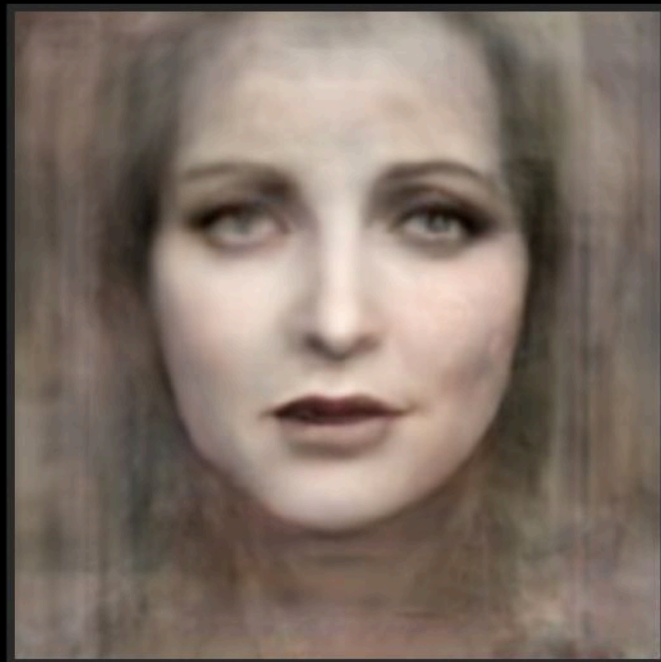


# Fayum Portrait



# Antoninus Pius





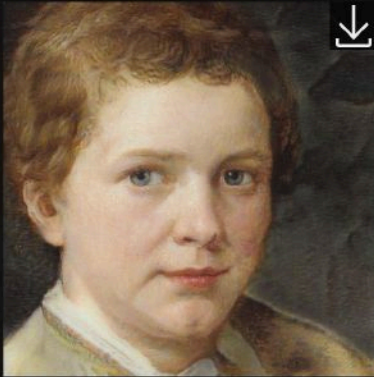
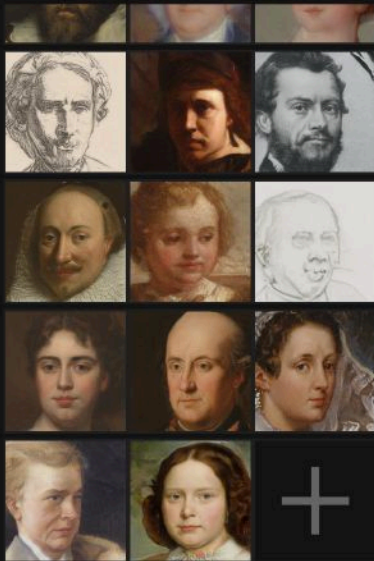


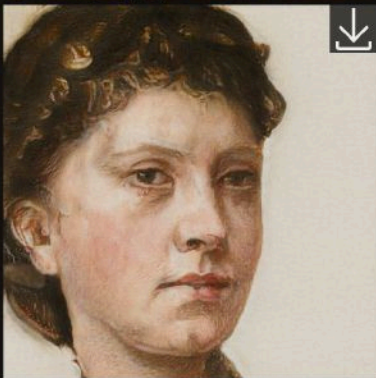
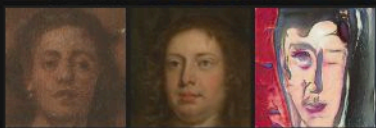
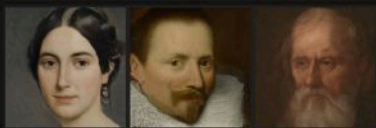
A new art movement  
is born today:

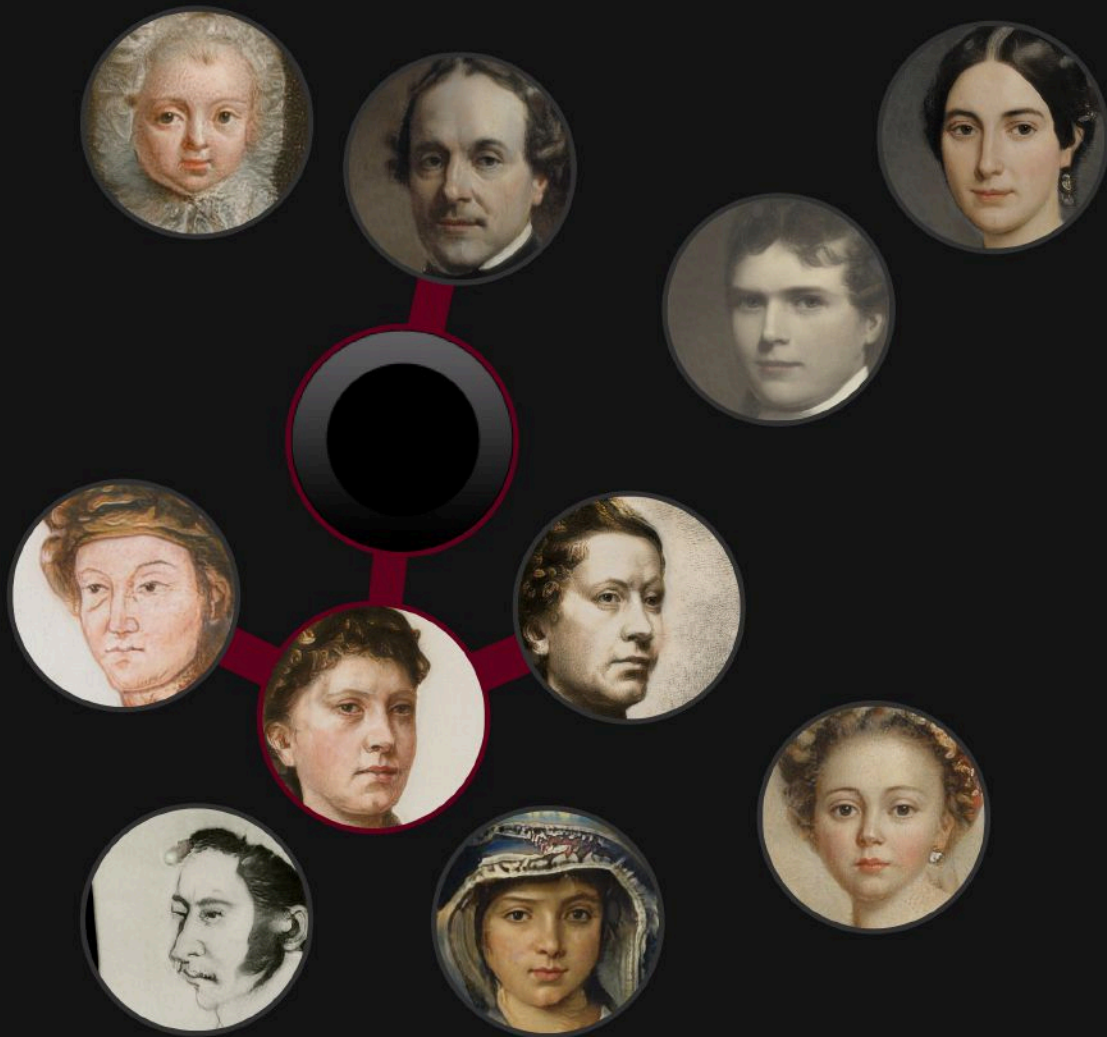
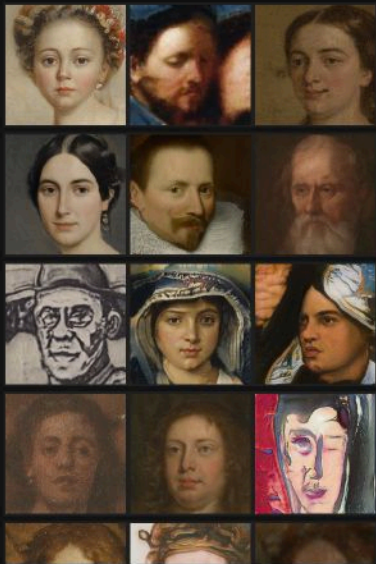


<http://fusionist.ai/>

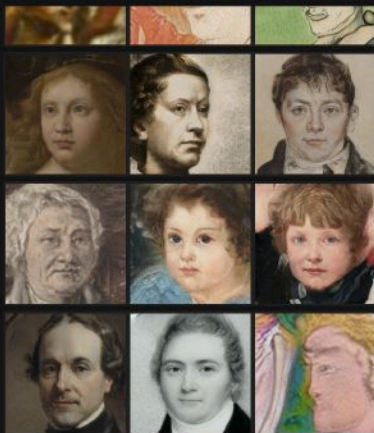
*soon available online*



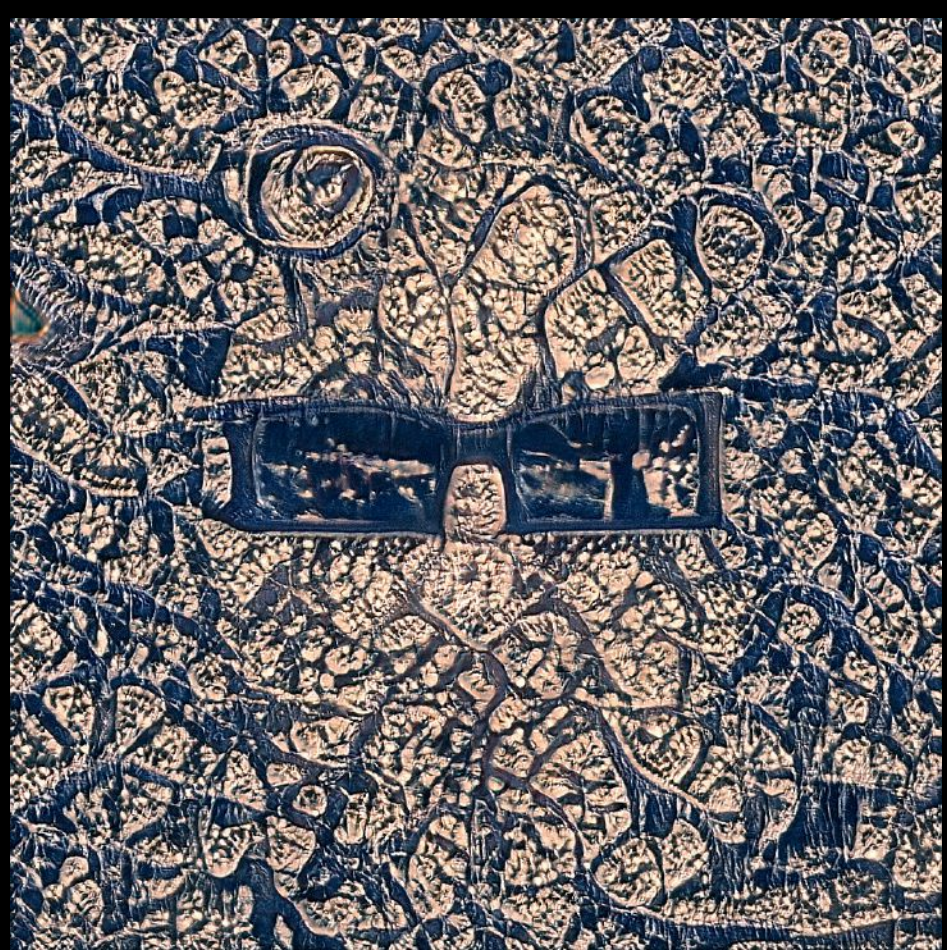
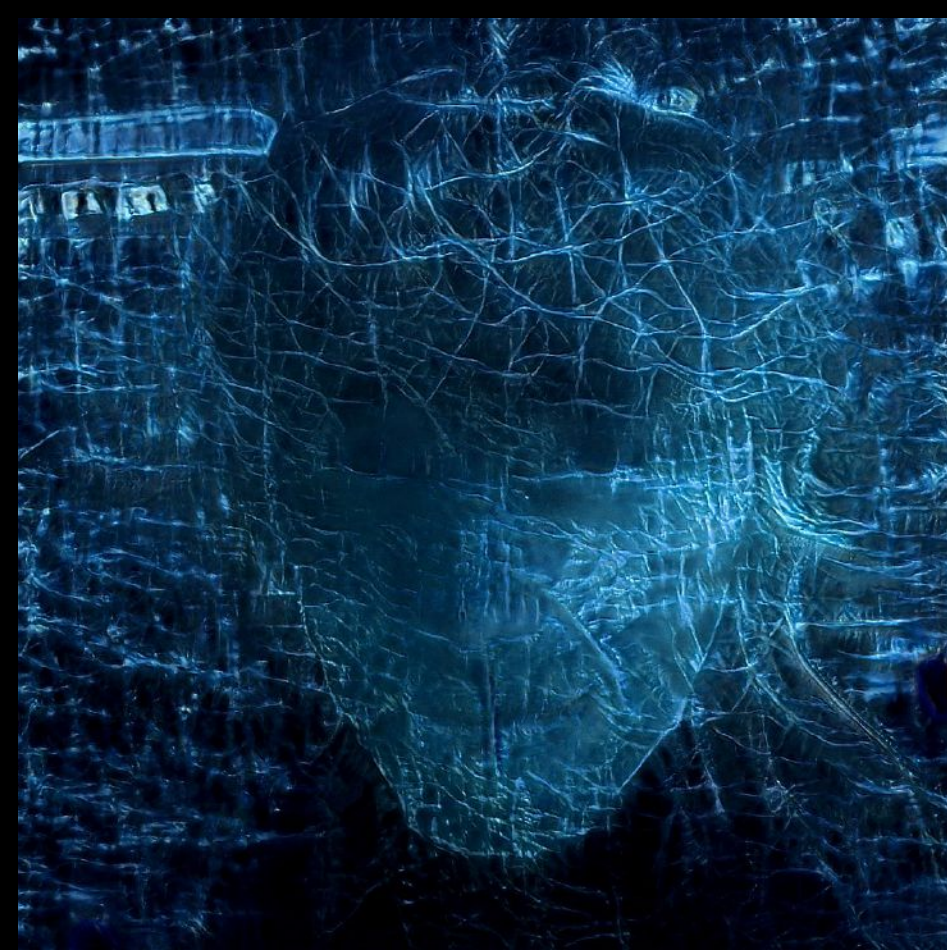






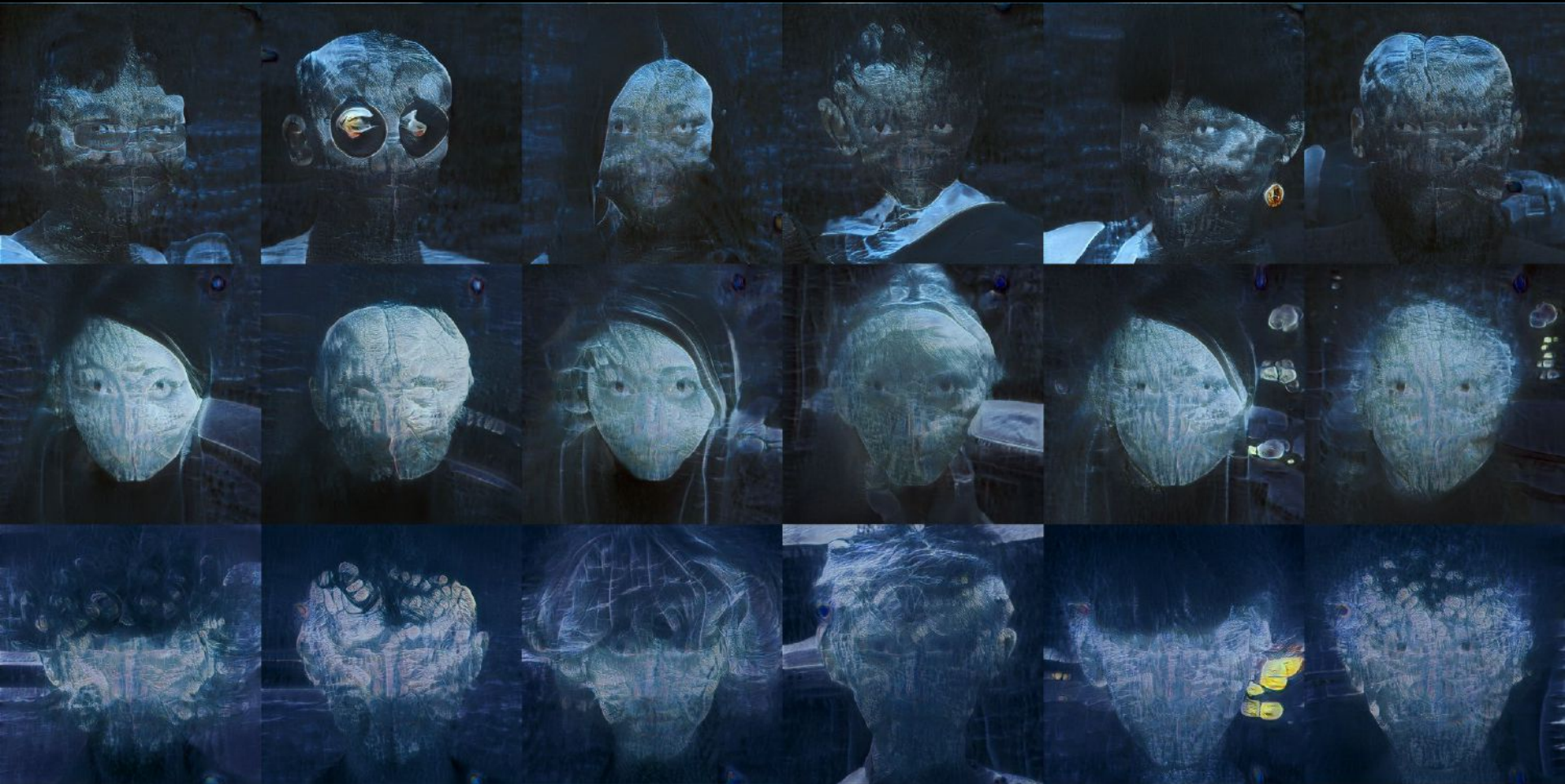






Maryam Ashoori





# Fusionism Movement



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