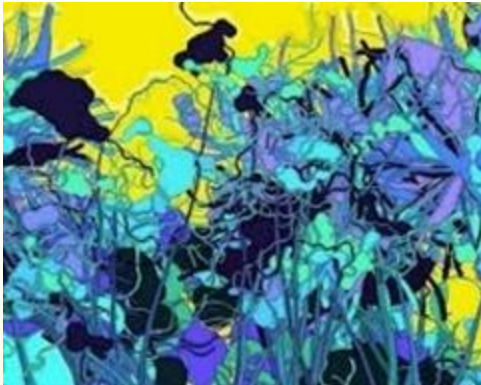# When a Machine makes it, is it still Art?

Piero Scaruffi (2018)

(revised 2022)
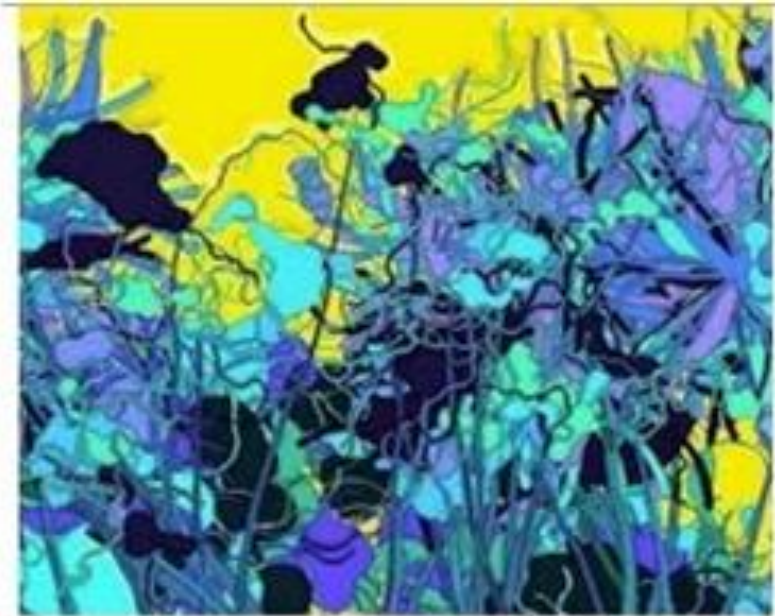
www.scaruffi.com

A brief History of Machine Art

Machine Art

- Harold Cohen's painting machine AARON (1973)

Machine Art

- ➢ Ken Goldberg's painting machine "Power and Water" (1992)
- ➢ Matthew Stein's online robotic artist PumaPaint (1998)
- ➢ Jurg Lehni's graffiti-spraying machine Hektor (2002)
- ➢ Pindar Van Arman's painting robots (2006)
- ➢ Luke Kelly and Doug Marx's Vangobot to reproduce artistic styles (2008)
- ➢ Harvey Moon's drawing machines (2010)
- ➢ Patrick Tresset 's portrait-maker robot Paul (2011)
- ➢ Oliver Deussen's painting robot e-David (2013)
- ➢ Simon Colton's program The Painting Fool (2013)

Machine Art

- Oxford Univ (2014): visualizing what a neural network is learning while it is being trained

Deep Inside Convolutional Networks: Visualising Image Classification Models and Saliency Maps

Karen Simonyan   Andrea Vedaldi   Andrew Zisserman
Visual Geometry Group, University of Oxford
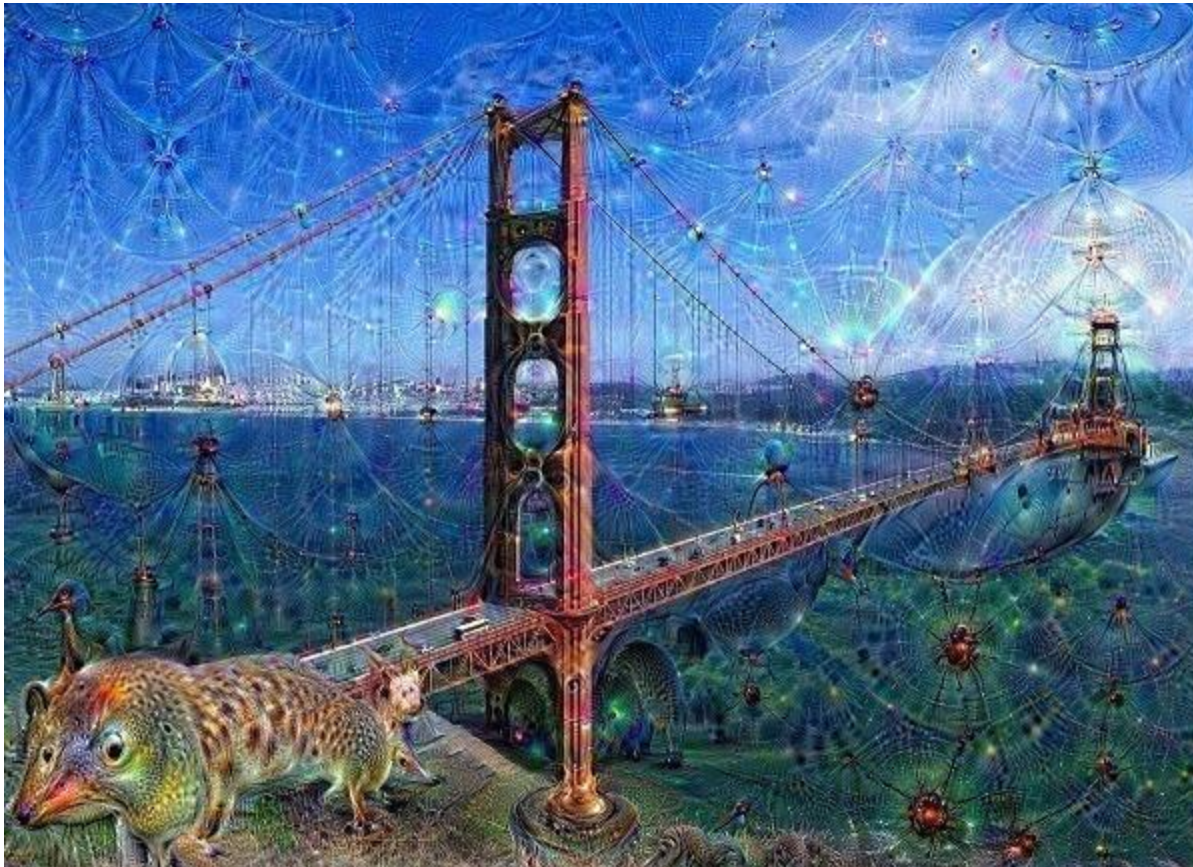{karen,vedaldi,az}@robots.ox.ac.uk

Abstract

This paper addresses the visualisation of image classification models, learnt using deep Convolutional Networks (ConvNets). We consider two visualisation techniques, based on computing the gradient of the class score with respect to the input image. The first one generates an image, which maximises the class score [5], thus visualising the notion of the class, captured by a ConvNet. The second technique computes a class saliency map, specific to a given image and class. We show that such maps can be employed for weakly supervised object segmentation using classification ConvNets. Finally, we establish the connection between the gradient-based ConvNet visualisation methods and deconvolutional networks [13].

Andrea Vedaldi
Visualising deep networks

UNIVERSITY OF OXFORD

Machine Art

- Alexander Mordvintsev's "Inceptionism" (2015)

Machine Art

Leon Gatys and Alexander Ecker's "A Neural Algorithm of Artistic Style" (2015)

Leonid Afremov

Neural Network

Machine Art

- Mario Klingemann (Google artist in residence 2016)

MARIO KLINGEMANN

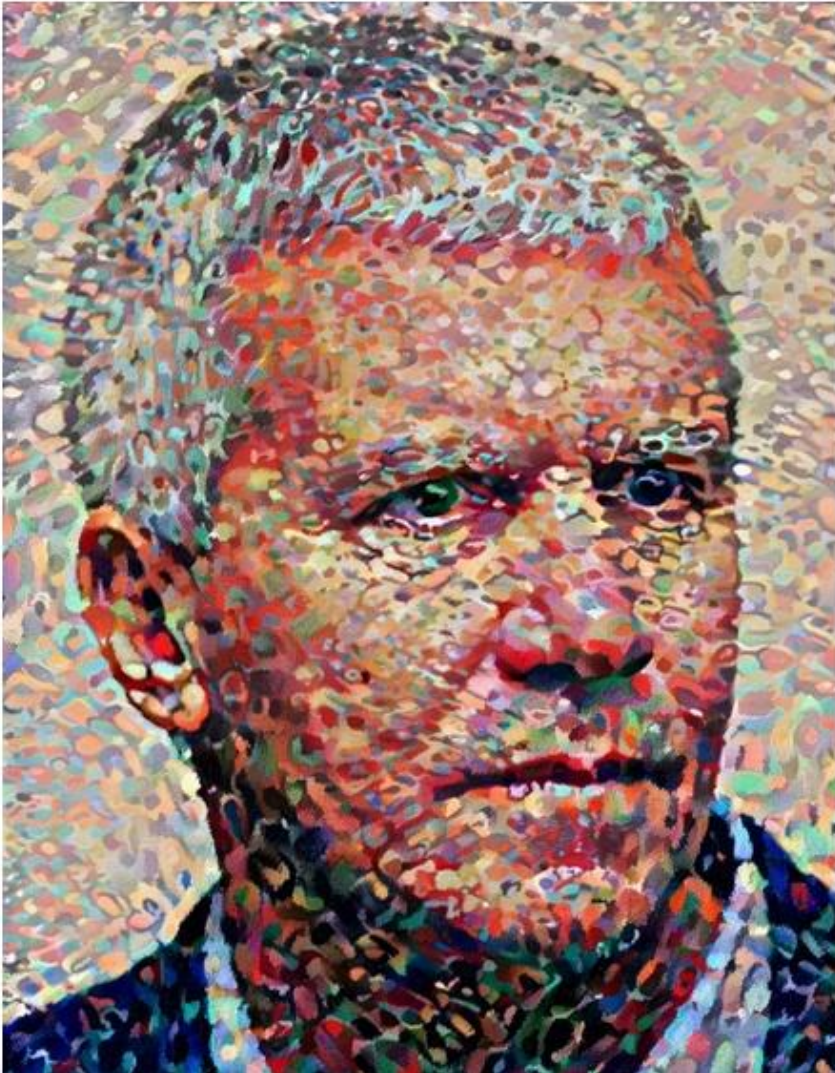"Memories of Passersby I" (2018)

Machine Art

Stephen Thaler's DABUS (2017)

DABUS's output gets progressively more surreal as cognitive flow is reduced

Machine Art

The Most Famous Artist (2017)

artificial intelligence
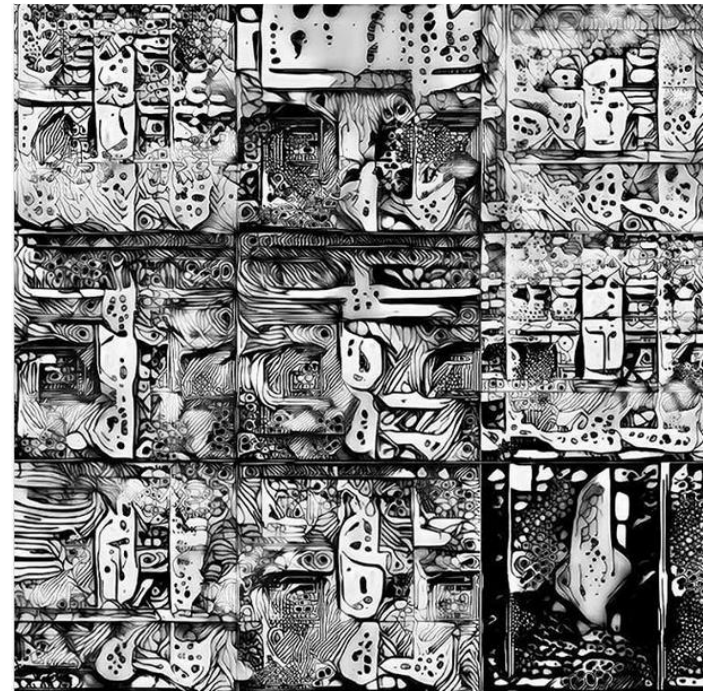THE END OF ART AS WE KNOW IT

the most famous artist

The McLoughlin Gallery

11a - 6p
Tuesday June 27
49 Geary St #200

Machine Art

- GAN artists
  - Paris-based art collective Obvious: "Portrait of Edmond Belamy" (2018)
  - Helena Sarin

Machine Art

Robot artist: Ai-Da (2019)

Aidan Meller

Introducing Ai-da, the world's first ultra-realistic humanoid AI robot artist

Ai-Da with Her Paintings. Photo by Victor Frank

"AI Robot Artist"

Ai-Da
Engineered Arts
https://ai-darobot.com/

Machine Art

AICAN (solo exhibition, New York, 2019)

HG CONTEMPORARY

AICAN + AHMED ELGAMMAL

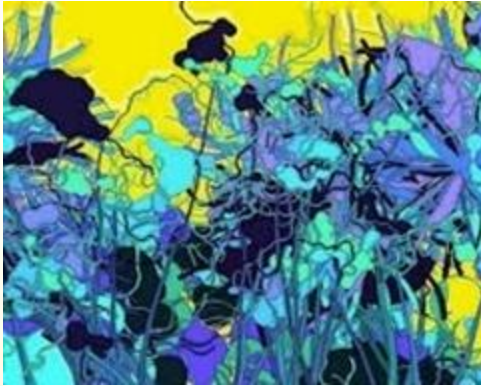HG CONTEMPORARY NEW YORK
2/12/2019

Machine Art

Jason Allen's "Théåtre d'Opéra Spatial" (2022) wins an art award

But is it Art???

And old discussion...

- The Cybernetic Serendipity exhibition (London, 1968)
- Jack Burnham: *"It is only a step from here to suppose that in time an aesthetics of artificial intelligence will evolve… a series of art forms that manifest true intelligence, but perhaps more meaningfully, with a capacity for reciprocal relationships with human beings"* ("Beyond Modern Sculpture", 1968)

What is authorship?
When a machine does something, who/what do we credit as the author? Who is the creator?
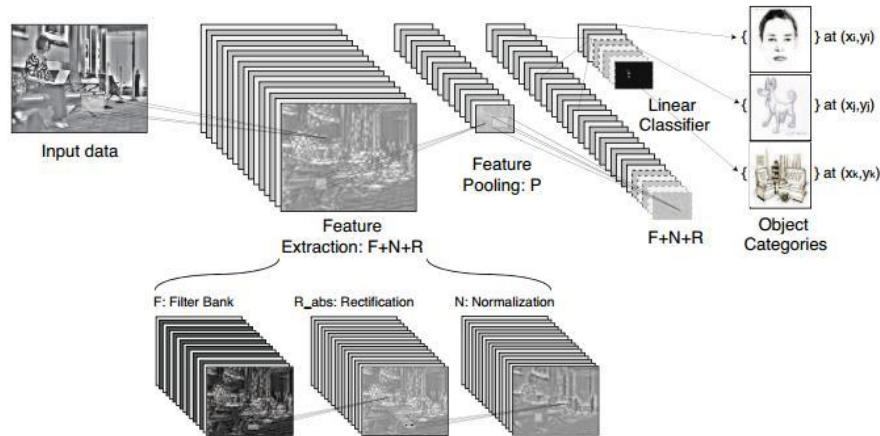
What is authorship?
When a machine does something, who/what do we credit as the author? Who is the creator?

- Skeptics: the author of machine art is not the machine but the engineer who programmed the machine

- Counter-argument: who is the creator of Leopardi's "Canto Notturno di un Pastore Errante dell'Asia"? Leopardi or the Moon? Was Leopardi just the "tool" used by the Moon to write a poem?

- Double-standard: Leopardi IS the creator of the poem that was triggered by the rays coming from the Moon but the machine is NOT the real creator of the file that was generated by a software written by an engineer

What is authorship?

Who should take credit?

Convolutional Network

Input data

Feature Pooling: P

Feature Extraction: F+N+R

F: Filter Bank   R_abs: Rectification   N: Normalization

Linear Classifier

Object Categories

F+N+R

Architecture of a typical convolutional network for object recognition

From a paper by Yann LeCun

Che fai tu, luna, in ciel? dimmi, che fai,
Silenziosa luna?
Sorgi la sera, e vai,
Contemplando i deserti; indi ti posi.
Ancor non sei tu paga
Di riandare i sempiterni calli?

What is authorship?

- The 20th century avant-garde (happening, interactive art, action painting, performance art, etc) sabotaged the concepts of authorship, originality, identity, etc
- Machine art is, in a sense a consequence of this process of demystification of the "Author"
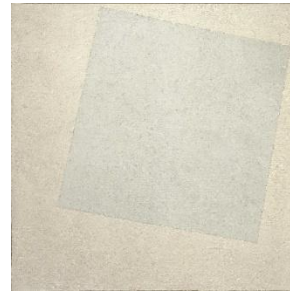
What is art?
How do we decide what is art?
and then does machine art qualify as art?

- Who decides what is Art?

- Everything is potentially Art

- The lay public finds arbitrary the decision of a museum to exhibit some abstract or conceptual contemporary art

- The lay public loves some "inceptionist" paintings produced by "deep" neural networks

What is art?

• Examples of art:

Marcel Duchamp's "Fountain" (1917)
Kazimir Malevich's "White on White" (1918)
 Man Ray's "The Enigma of Isidore Ducasse" (1920)
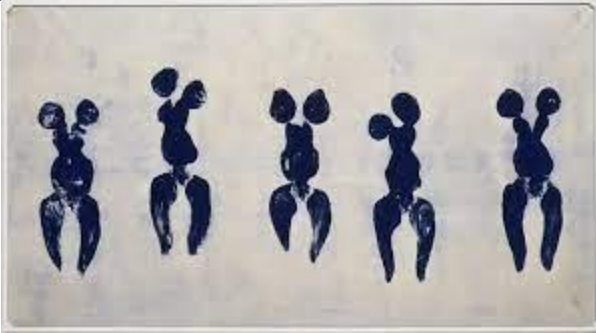Joseph Albers' "The City" (1928)
Jackson Pollock's "Blue Poles" (1952)
Yves Klein's "Anthropometries of the Blue Period" (1960)
Piero Manzoni : "Artist's Shit" (1961)
Shigeko Kubota's "Vagina Painting" (1965)
Marina Abramovic' "Imponderabilia" (1977)

What is art?

- Who decided that these are Art?
- Can anything be Art? Is there any human-made artifact that cannot possibly qualify as Art?
- What does it take to be called "Art"?

- Art is what the popes, the princes, the art critics, the art galleries, the art museums, the art collectors decide that it is "Art"
- Art is NOT in the eye of the beholder

What is art?

Is art uniquely human?

- Skeptic: natural beauty vs constructed beauty
- But is any constructed beauty not natural?

What is the meaning/purpose of this thing called art?

- Art interprets human history, the history of human civilization
- To understand why something is reputed beautiful by someone you have to understand a whole system, its history, its values, its processes
- Aesthetic experience cannot be reduced to a simple "Like"
- Art is a dialog between the artist and society (even when the artist doesn't want to have any dialog)
- If an artist creates an artwork and never shows it to anyone, is it art?

What is the meaning/purpose of this thing called art?

- What goes into a museum?
  - Michelangelo's David was commissioned by the Church for a cathedral
  - It was instead placed in a public square (1504)
  - Today the statue is at the Galleria dell'Accademia
  - It has been displayed in the cathedral only once for one day (12 November 2010) and it was a replica
  - A replica stands in the public square

What is the meaning/purpose of this thing called art?

- (A provocateur can claim that) *an artwork is merely the decoration for the slide presentation on the importance of that artwork*

- What you read today about the artwork "is" what the artist did

- Art is about stories, not objects

- Art's function is precisely to tell a story, the story of the human race through the ages

- Art is an interpreter, eviscerating subtle truths of human society

What is the meaning/purpose of this thing called art?

- Theodor Adorno: *"Distance is the primary condition for getting close to the content of a work"* ("Aesthetic Theory", 1973)

- Paraphrasing Umberto Eco: the meaning of an artwork is the sum of all possible interpretations by all readers ("Open Artwork", 1962)

What is the meaning/purpose of this thing called art?

- (A provocateur can say that) creating art is not difficult: making sense of it is difficult
- Art can be everywhere (made by other humans, by nature or by machines), but it's humans who appreciate it
- Sure, machines can produce artworks
- But can they critique it?
- Can a machine critique the work of art of another machine? Or the work of art of a human artist?
- Can it write a history of art through the centuries?

What is machine art?

- The product of machine art is no longer the product of hard labor but instead an instantaneous generation by means of software

- Machine art removes the process of bodily creation

- Machine art enables in the arts the industrial paradigm of rapid prototyping

- Not much changes for the experience of the observer, but a lot changes in the experience of the creator

What is machine art?

- It took a while for photographers and filmmakers to realize that the new tool enabled a new form of art

- The fact that machine art can produce a lot of artworks very quickly will lead to a new form of human art

What is an artwork?

- The 20th century introduced alternative notions of visual art, different genres, not just painting and sculpture: kinetic art, performance art, conceptual art, and even readymades
- The whole art-making machine could be viewed as "the" work of art
- The software code of the neural network, the algorithm, could be "the" work of art

What is an artwork?

- A machine artwork could be viewed as conceptual art or performance art or a happening
- The same printout can be viewed as a readymade, a painting, part of a kinetic sculpture, the component of a performance, the element of a conceptual piece, …

What is an artwork?

- What is the photograph by Julian Wasser of the 76-year-old Marcel Duchamp playing chess with a 20-year-old naked woman, Eve Babitz (Pasadena in 1963)?
- Is the photograph a work of visual art by Wasser?
- Is it a work of conceptual art by Duchamp?
- Or is it a work of body art by Eve Babitz?
- Or is it a theatrical work by curator Walter Hopps?
- Or is it just two weirdos killing time on a hot day?