Generative Art

Enigma

What?

> Made by autonomous systems, *non-human*

> Independently determine features of art

> Also called *Algorithmic Art*, but can be made using systems Of:

chemistry, biology, mechanics and robotics, smart materials, manual randomization, mathematics, data mapping, symmetry, tiling ...

takes full advantage of everything that *computing* has to offer, producing *elegant* and *compelling artworks*

generate *unpredictable events*, all with a *recognizable common character*

the study of *mathematical operations* suitable for generating *artistic* images

- Franke on generative mathematics, 1989

Art?

Visual art

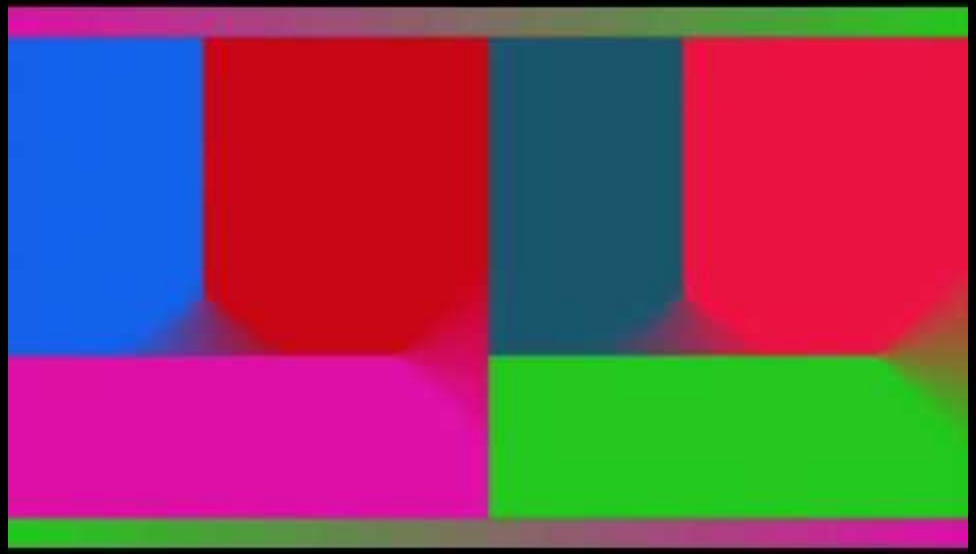
Architecture & Design

Music

Live coding

Literature

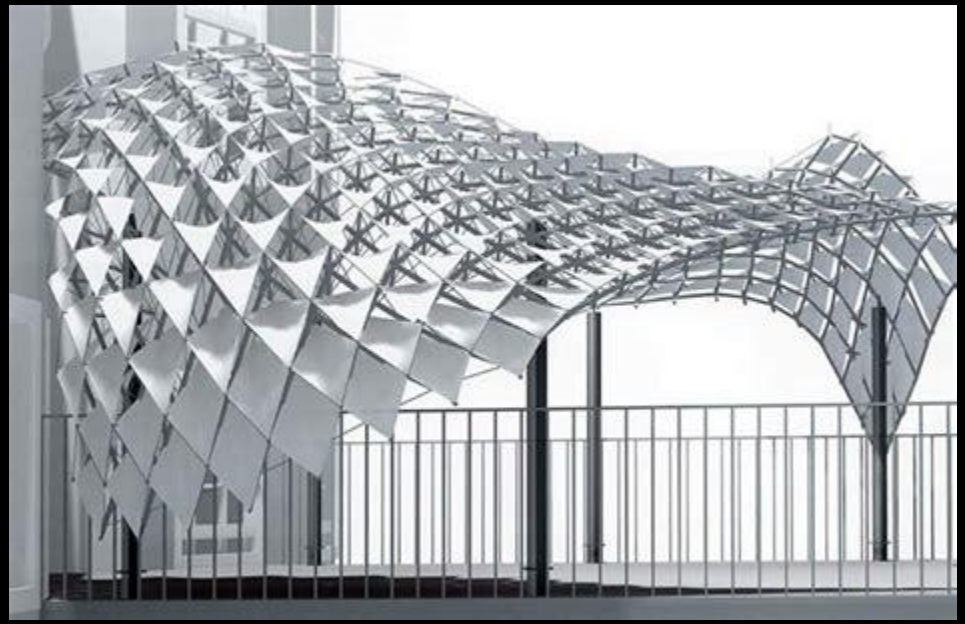
Music



Visual Art

Weavesilk

Architecture & Design



Live Coding

used to create live music and/or video by manipulating generative systems on stage

Literature

… son philosophe quelque chose brillait au milieu du sentier il y avait un avant et un après ...

Generative & Evolutionary Art

Randomness is crucial for creating generative art. The art should be different each time you run the generation script, so randomness is usually a large part of that.

Algorithms – Implementing an algorithm visually can often generate awesome art, for example, the binary tree above.

Geometry – Most generative art incorporates shapes, and the math from high school geometry class can aid in some really cool effects

https://beta.observablehq.com/@mbostock/introduction-to-code

Evolutionary Art

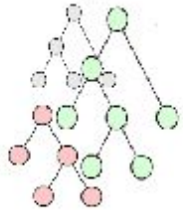
https://www.ashleymills.com/art/evoart/

Function Trees

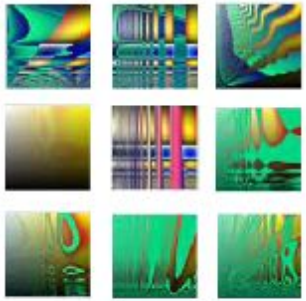
> Pictures can be generated from functions
> Functions can be represented as trees
> Trees can be "bred" together or mutated to produce new trees

> Generate an initial population of random-function trees
* Generate their corresponding pictures
> Select the best looking pictures from the current generation
> Breed the underlying function trees of those selected
> The offspring become the new generation of pictures
> Goto *

Generate initial population of function trees



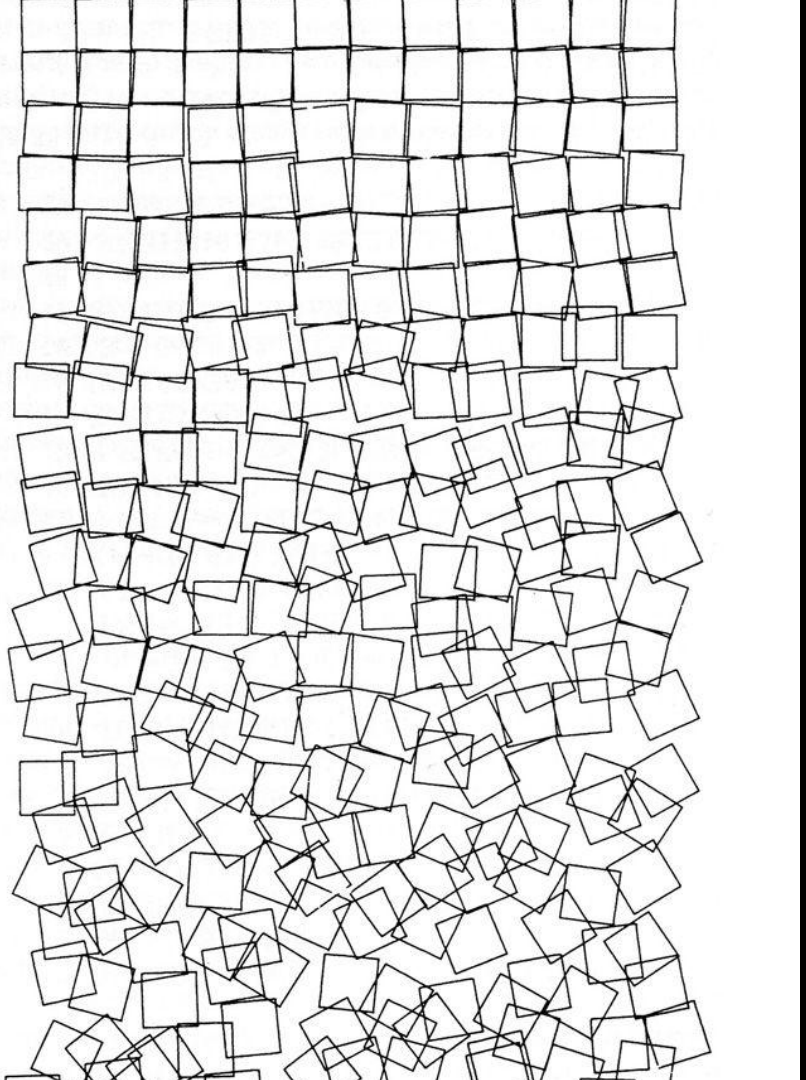
Generate images from function-trees

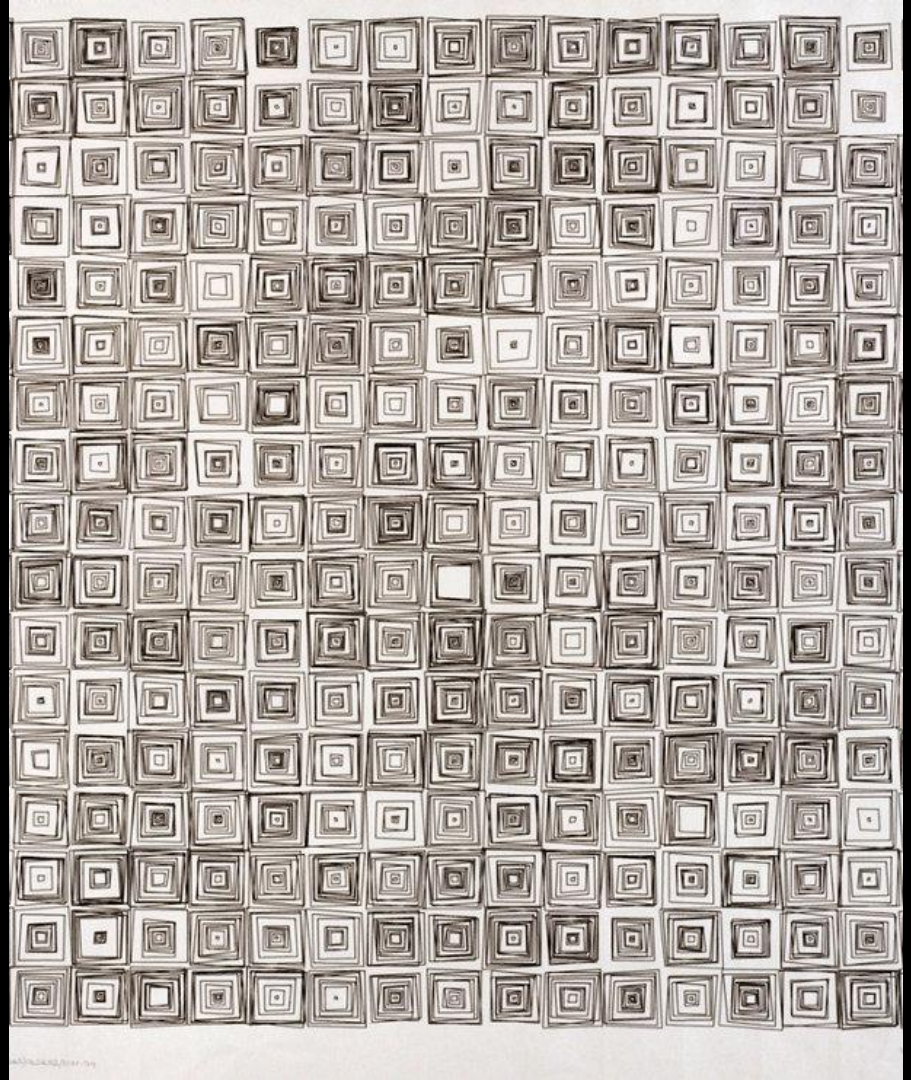


Select "prettiest" individuals

Breed their underlying function trees

Let’s Play





Any Questions?