

The slide features a solid blue background. On the left and right edges, there are decorative geometric patterns composed of overlapping chevron and parallelogram shapes in yellow, magenta, cyan, and grey. The main title is centered in the upper half of the slide.

Introduction to Generative Art

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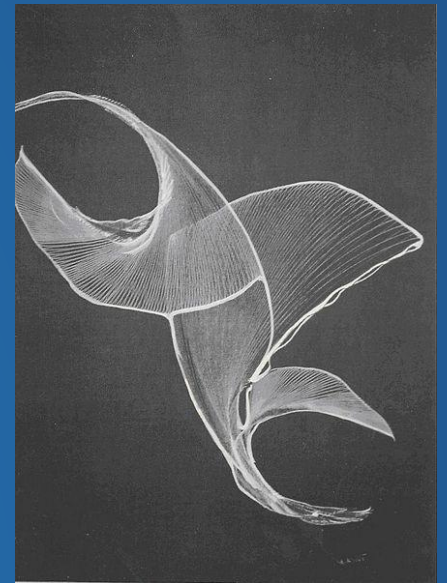
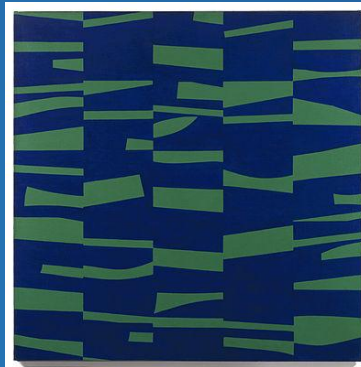
Date: 2013.08.09

Definition

Art that in whole or part has been created with the use of an autonomous system.

Autonomous system = non-human & independent

- Music
- Fine Art
- Software Art
- Architecture
- Literature
- Live coding



[1] en.wikipedia.org/wiki/Generative_art

Useful Links

Generative Art - Annual International Conference

<http://www.generativeart.com/>

Generative Art Links - Mikael Hvidtfeldt

<http://blog.hvidtfeldts.net/index.php/generative-art-links/>

Gallery of Computation - Jared Tarbell

<http://complexification.net/gallery/>

AbondandedArt - zenbullets

<http://abandonedart.org/>

Softwares (free/open source)

[General Purpose]

Processing - <http://processing.org/>

vvvv - <http://vvvv.org/>

PureData - puredata.info

[Specific Systems]

Context Free Art - <http://www.contextfreeart.org/>

Structure Synth - <http://structuresynth.sourceforge.net/>

[Live and Interactive Coding]

SuperCollider - <http://supercollider.sourceforge.net/>

Fluxus - <http://www.pawfal.org/fluxus/>

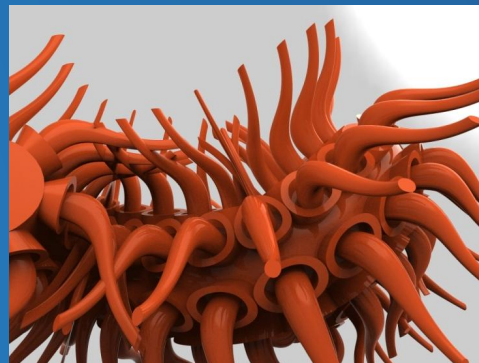
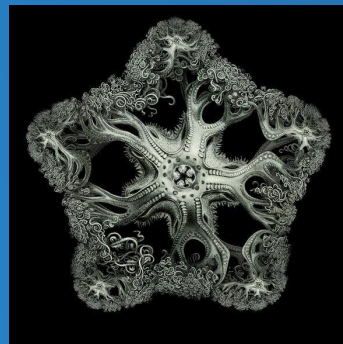
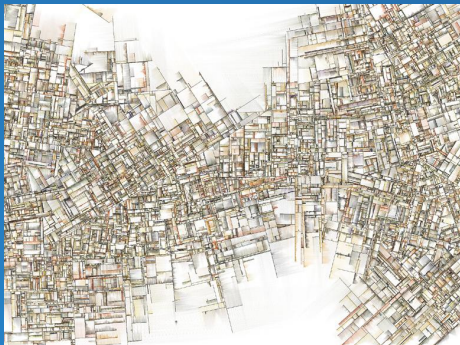
2D vs. 3D

2D Variables: pixel, vector

3D Variables: vertex, edge, face, material, lighting

2D: learning curve is easy, output = layer, print, laser cut

3D: learning curve is hard, output = 3D printer, architecture



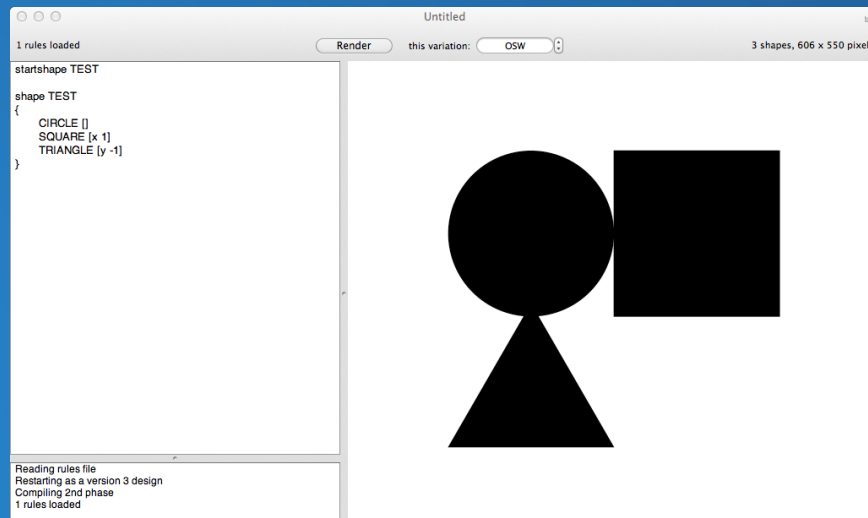
Get Your Hands Dirty

Algorithm Ink - Aza Raskin

<http://azarask.in/projects/algorithm-ink/#0656fbe7>

Context Free Art

<http://www.contextfreeart.org/>



Context Free Grammar

Shape Rules

```
startshape foo

shape foo
{
    SQUARE []
}
```

Primitive Shapes

```
SQUARE []

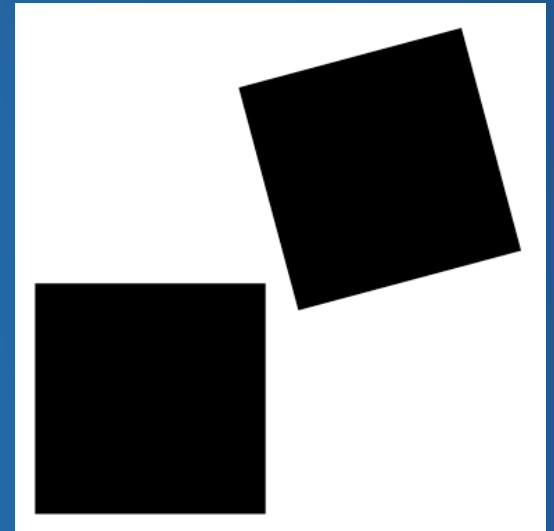
CIRCLE []

TRIANGLE []
```

Shape Adjustments

```
startshape foo

shape foo
{
    SQUARE []
    SQUARE [x 1 y 1 r 15 ] // translate along the x-axis by 1
                           // translate along the y-axis by 1
                           // rotate 15 degrees
}
```



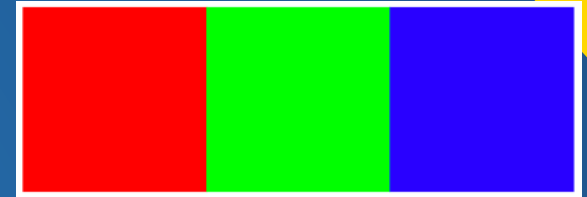
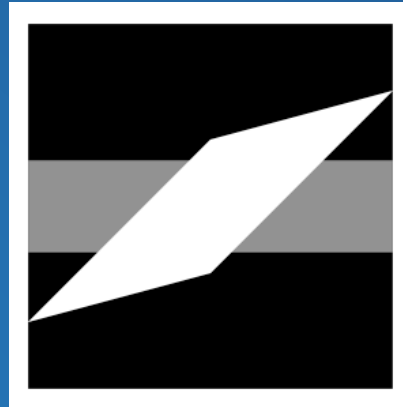
Context Free Grammar

Shape Adjustments

```
startshape foo
```

```
shape foo
```

```
{  
    SQUARE [ s 2 ]  
    SQUARE [ s 2 0.5 b 0.5 ]  
    SQUARE [ skew 45 15 b 1 ]  
}
```



```
startshape foo
```

```
shape foo
```

```
{  
    SQUARE [ h 0 sat 1 b 1 ]  
    SQUARE [ x 1 h 120 sat 1 b 1 ]  
    SQUARE [ x 2 h 240 sat 1 b 1 ]  
}
```

Hue number	Primary	Secondary	Tertiary
0	Red		
30			Orange ("Red-Yellow")
60		Yellow	
90			Yellow-Green
120	Green		
150			Aqua ("Green-Cyan")
180		Cyan	
210			Turquoise ("Cyan-Blue")
240	Blue		
270			Violet ("Blue-Magenta")
300		Magenta	
330			Reddish Purple ("Magenta-Red")
360 (=0)	Red		

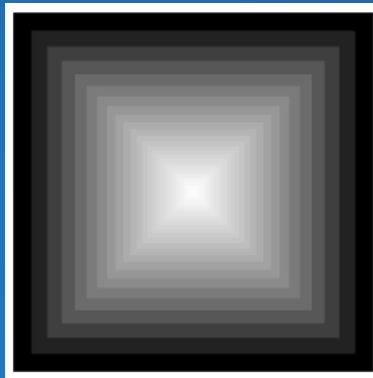
Being Creative

Recursive

```
startshape foo
```

```
shape foo
```

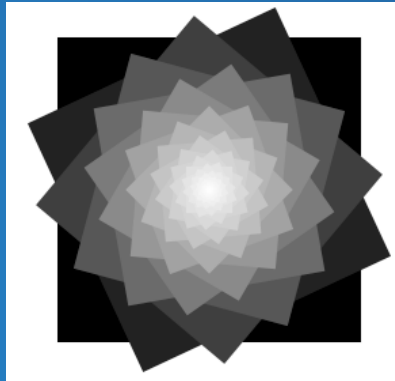
```
{  
    SQUARE [  
        foo [ s 0.9 b 0.1 ]  
    ]  
}
```



```
startshape foo
```

```
shape foo
```

```
{  
    SQUARE [  
        foo [ s 0.9 b 0.1 r 25 ]  
    ]  
}
```



```
startshape foo
```

```
shape foo
```

```
{  
    SQUARE [  
        foo [ s 0.995 b 0.008 r 1 ]  
    ]  
}
```

```
shape foo
```

```
{  
    SQUARE [  
        foo [ s 0.999 b 0.0008 r 1 ]  
    ]  
}
```

Being Creative

Tweak Variables

```
startshape main

shape main
{
    loop 100 [ ] foo [ ]
}

shape foo
{
    SQUARE [ ]
    foo [ s 0.999 b 0.0008 r 1 flip (0..15) x 1 ]
    // Try changing x to be either 1 or 0.1
}
```

