

Algorithmic art

Talktilla

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Credits

TIPE subject, supervised by Stefan Bornhoffen

Participants :

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- Maxime Sautereau
- Alexandre Terrien
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Computer art

Definition

Art where a computer is part of the production or displaying of the artwork.

Examples :

- Computer-Generated Imagery
- Video games
- Interactive Art
- Generative art

Algorithmic art

Definition

Art (mainly visual) where the artwork is produced by an algorithm. The artist usually doesn't take part in the generation.

Fractals

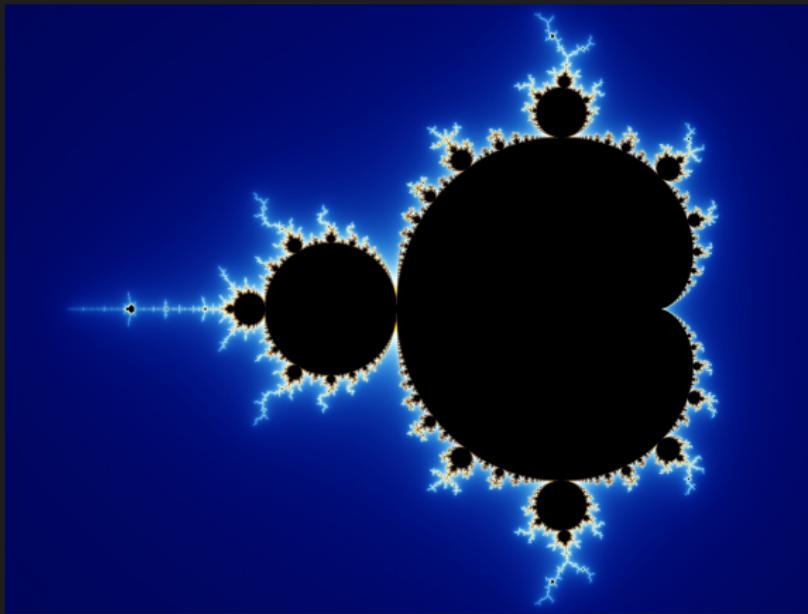


Figure: Mandlebrot set, created by Wolfgang Beyer with the program Ultra Fractal 3.

L-systems



Figure: L-system modelisation by Sakurambo

Our realisation

Many known algorithms/models to produce such work, so the interesting part is to create an original algorithm.

Representation of waves

- Propagation
- Interactions
- Colours
- Rainbows !

Data structures : Point

Attributes :

- Red channel
- Green channel
- Blue channel
- Alpha channel

Methods :

- Associated setters and getters
- Render a point

Representation

Screen represented by matrix of points, each element of the array is linked to a pixel.

We iterate over the matrix and compute values for one or more of the channel (in our case, the transparency)

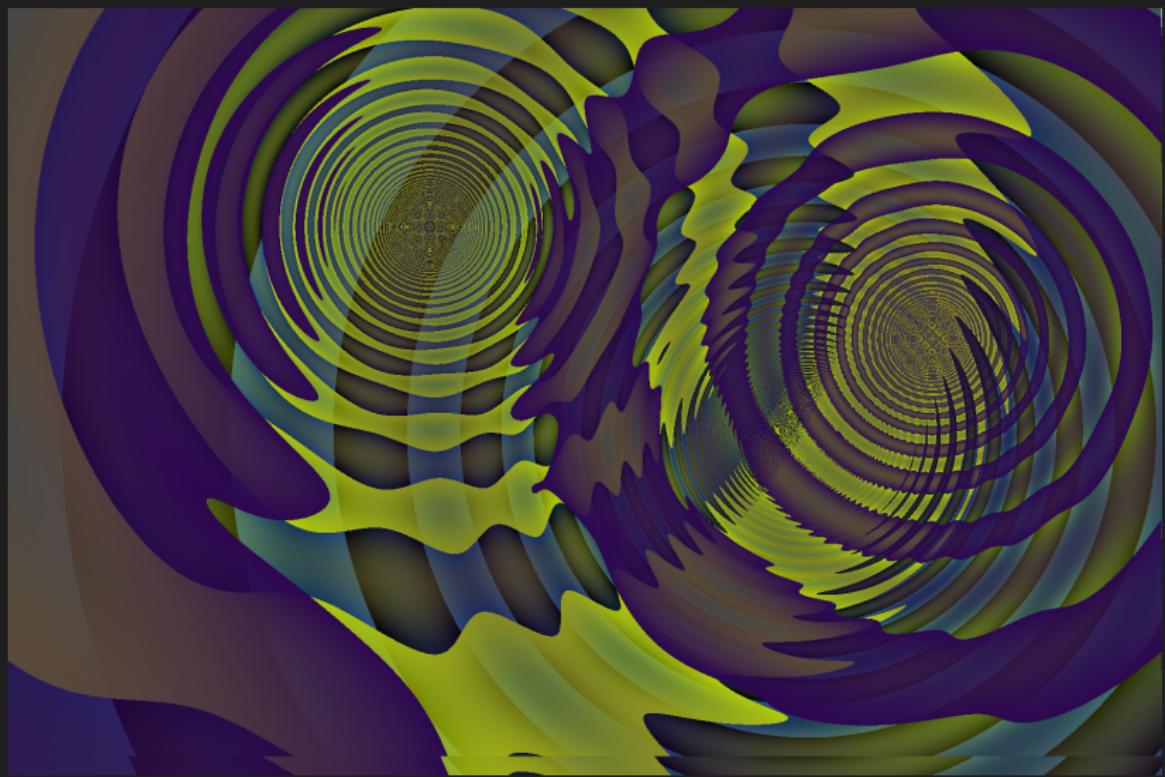
General algorithm

```
Data: buffer, bufferw, bufferh
while  $\neg stopCondition()$  do
    source  $\leftarrow randomPoint()$ 
    for  $i \leftarrow 0$  to  $buffer_w$  do
        for  $j \leftarrow 0$  to  $buffer_h$  do
             $d \leftarrow dist(buffer[i, j], source)$ 
             $buffer[i, j].alpha \leftarrow f(buffer[i, j].alpha, d)$ 
        end
    end
    render(buffer)
end
```

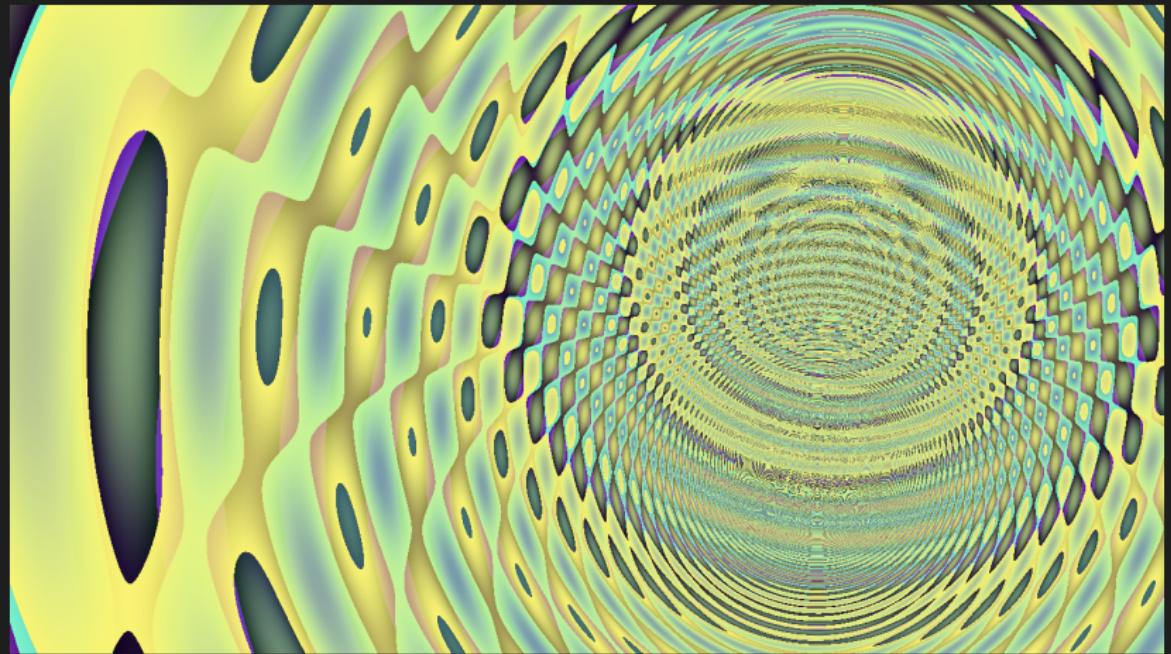
Choice of function

- Variation of alpha (transparency) value.
- Value between 0 and 255
- Representation of waves \Rightarrow sinus and cosinus
- Apparition of previous alpha value (interactions)
- Random parameters for each source

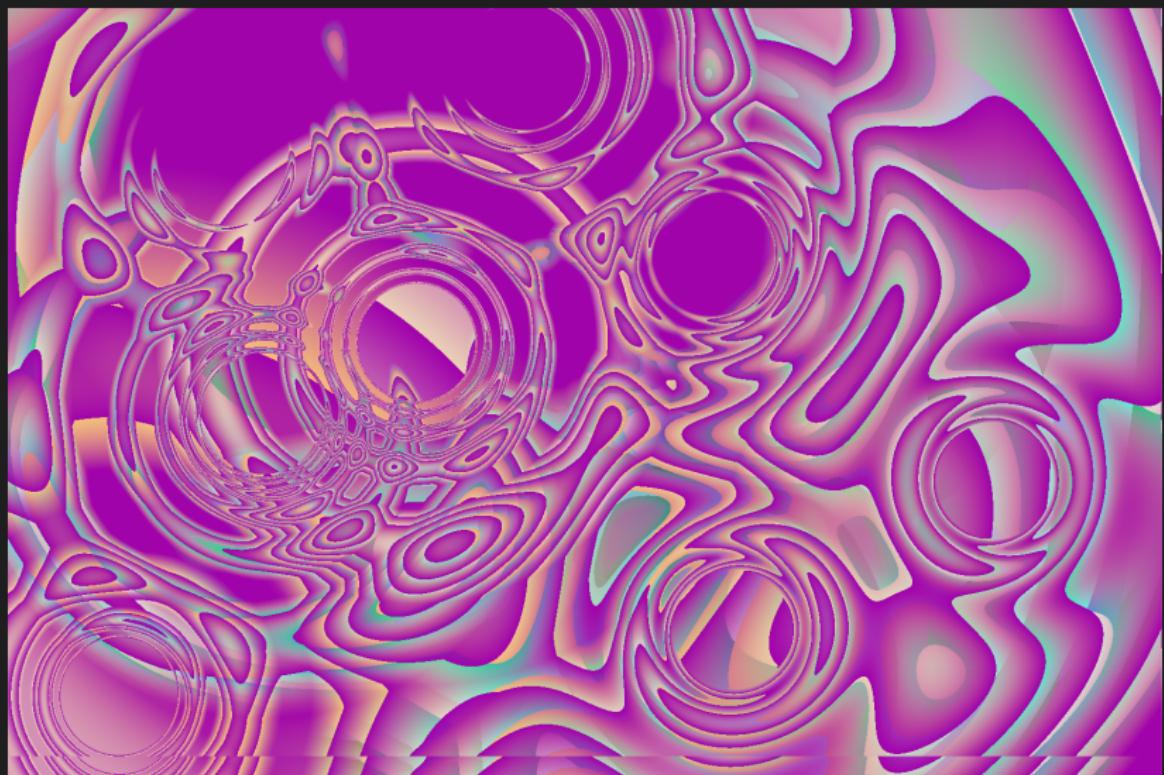
Results



Results



Results



Results

