

# **The Interactions Between Mathematics & Art**

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MATH 400

Mathematics and visual arts mutually reinforce one another:

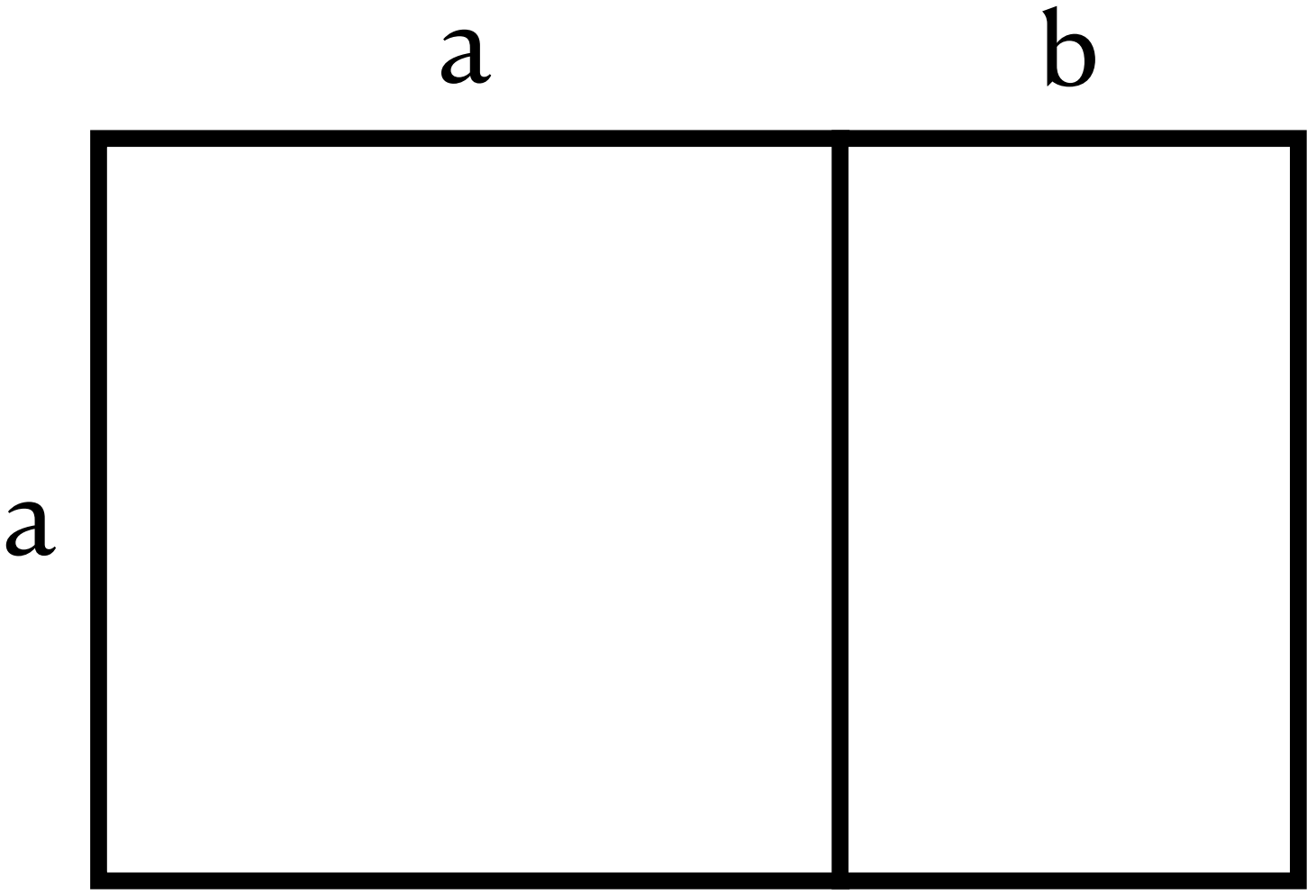
**-Mathematics as tools for creating art**

-Art as stimuli to mathematical research

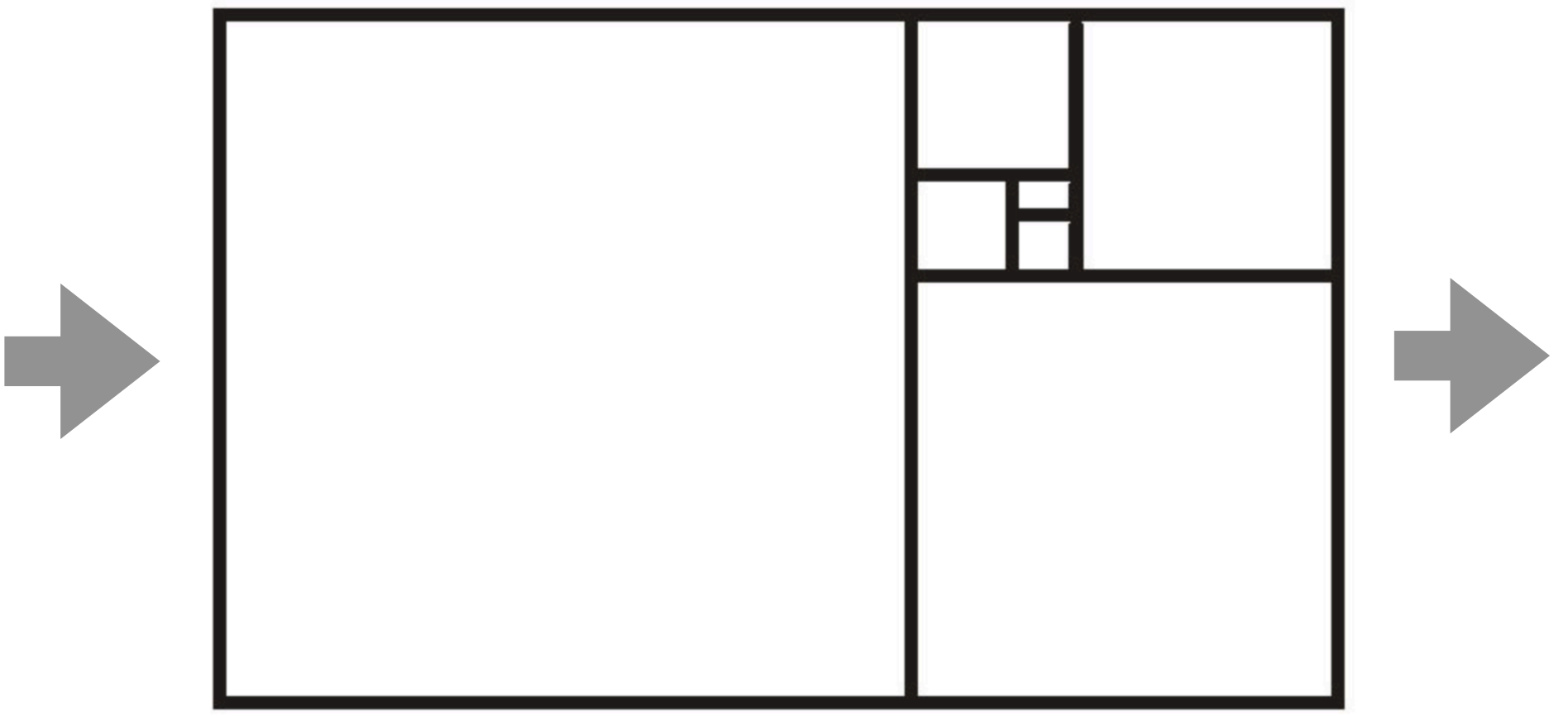
- Symmetry
- Linear Perspective
- Proportion
- **Golden Ratio**
- **Data Visualization / Media Art**

# Golden Ratio

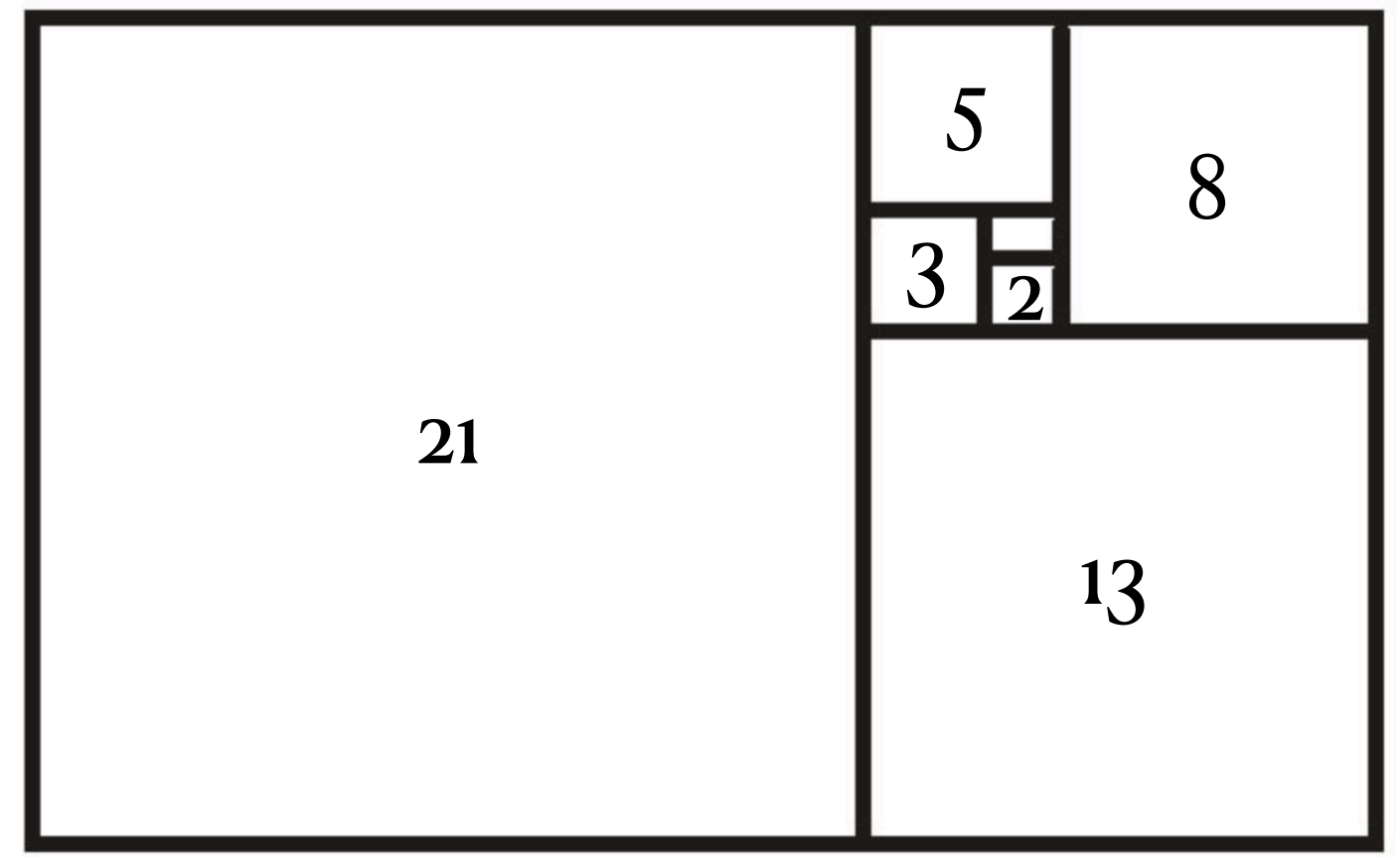
## Calculation



## Golden Rectangles



## Fibonacci Sequence

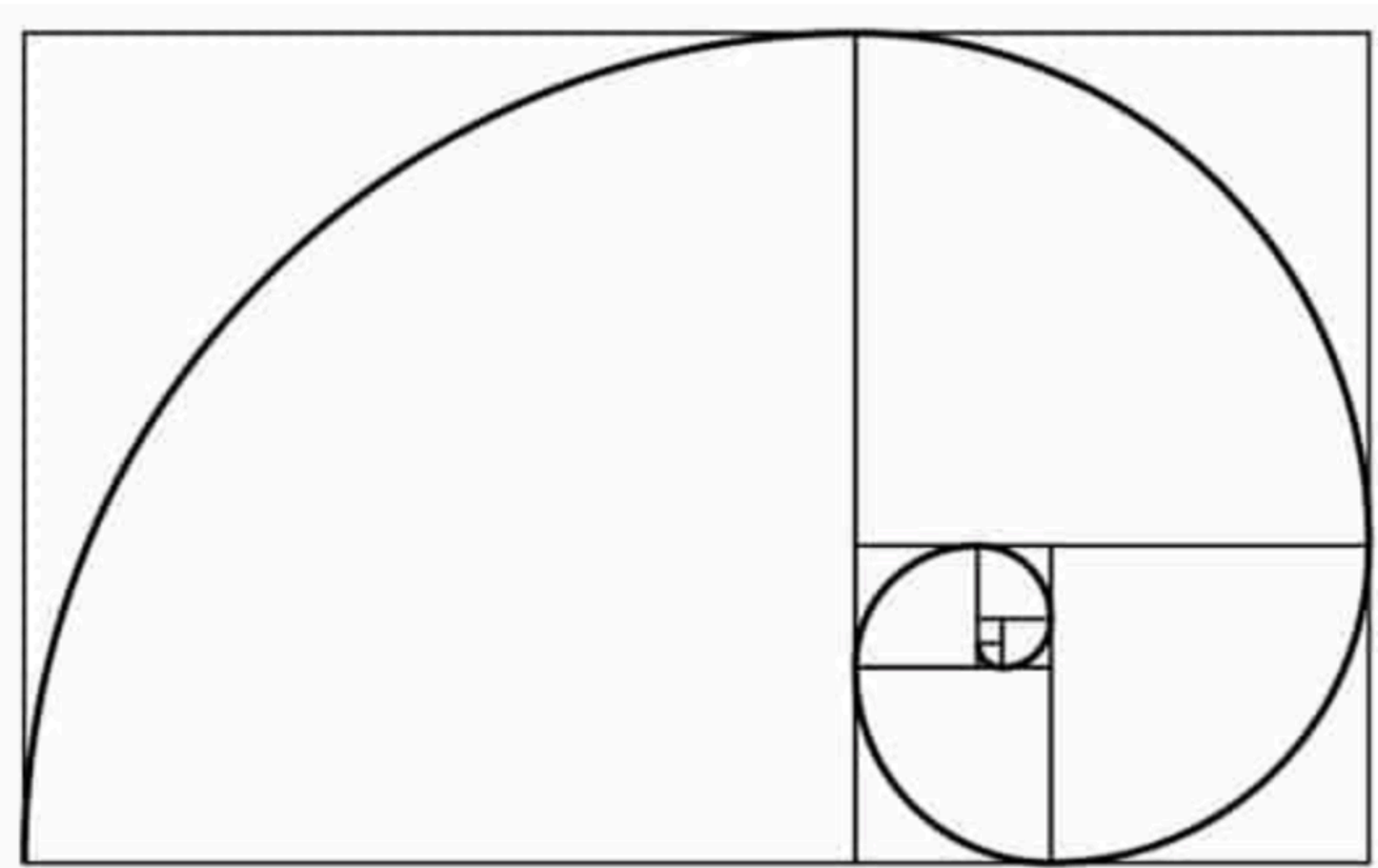


$$\frac{a + b}{a} = \frac{a}{b} \stackrel{\text{def}}{=} \varphi$$

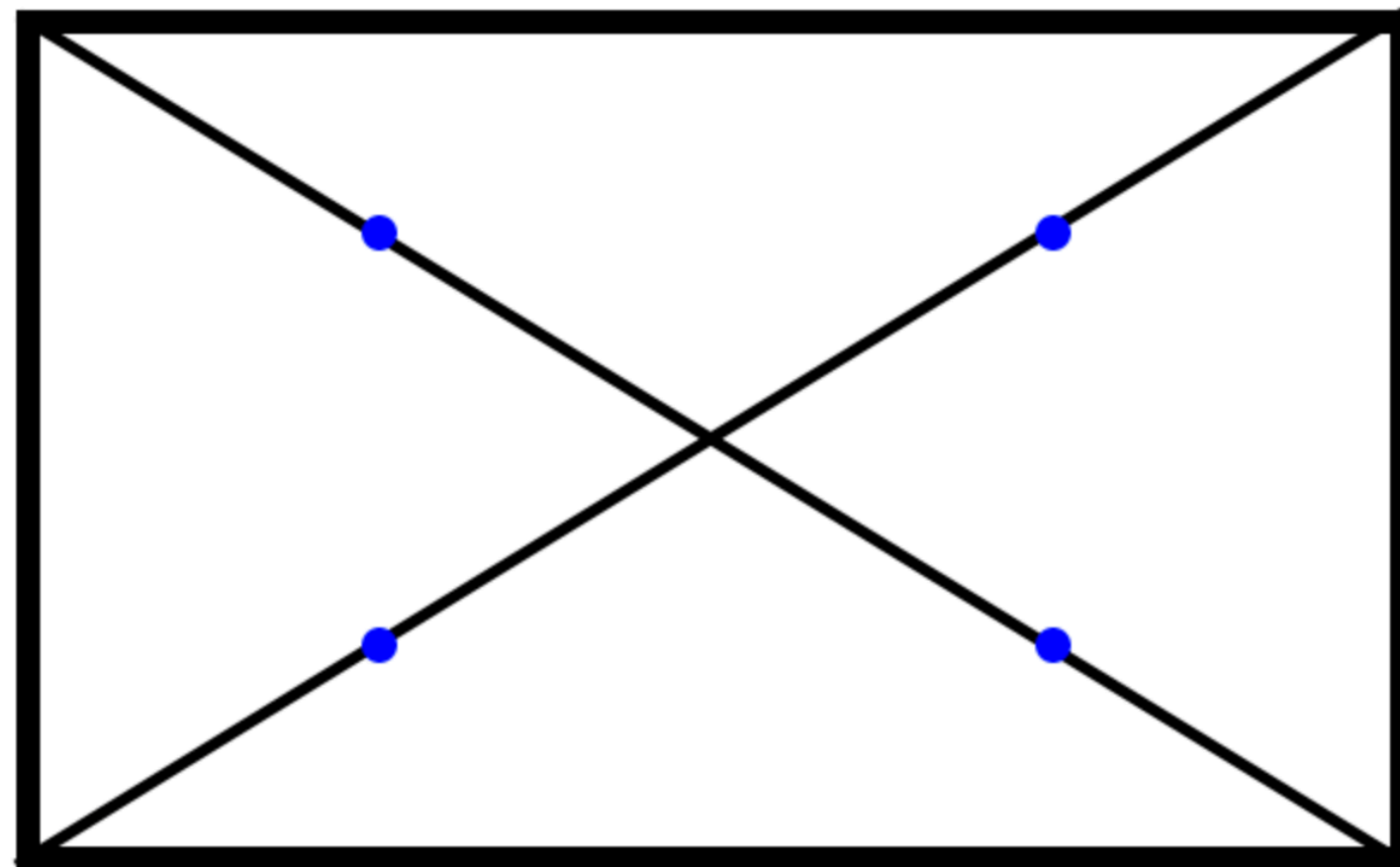
$$\varphi = \frac{1 + \sqrt{5}}{2} = 1.618033 \dots$$

1, 1, 2, 3, 5, 8, 13, 21, ...

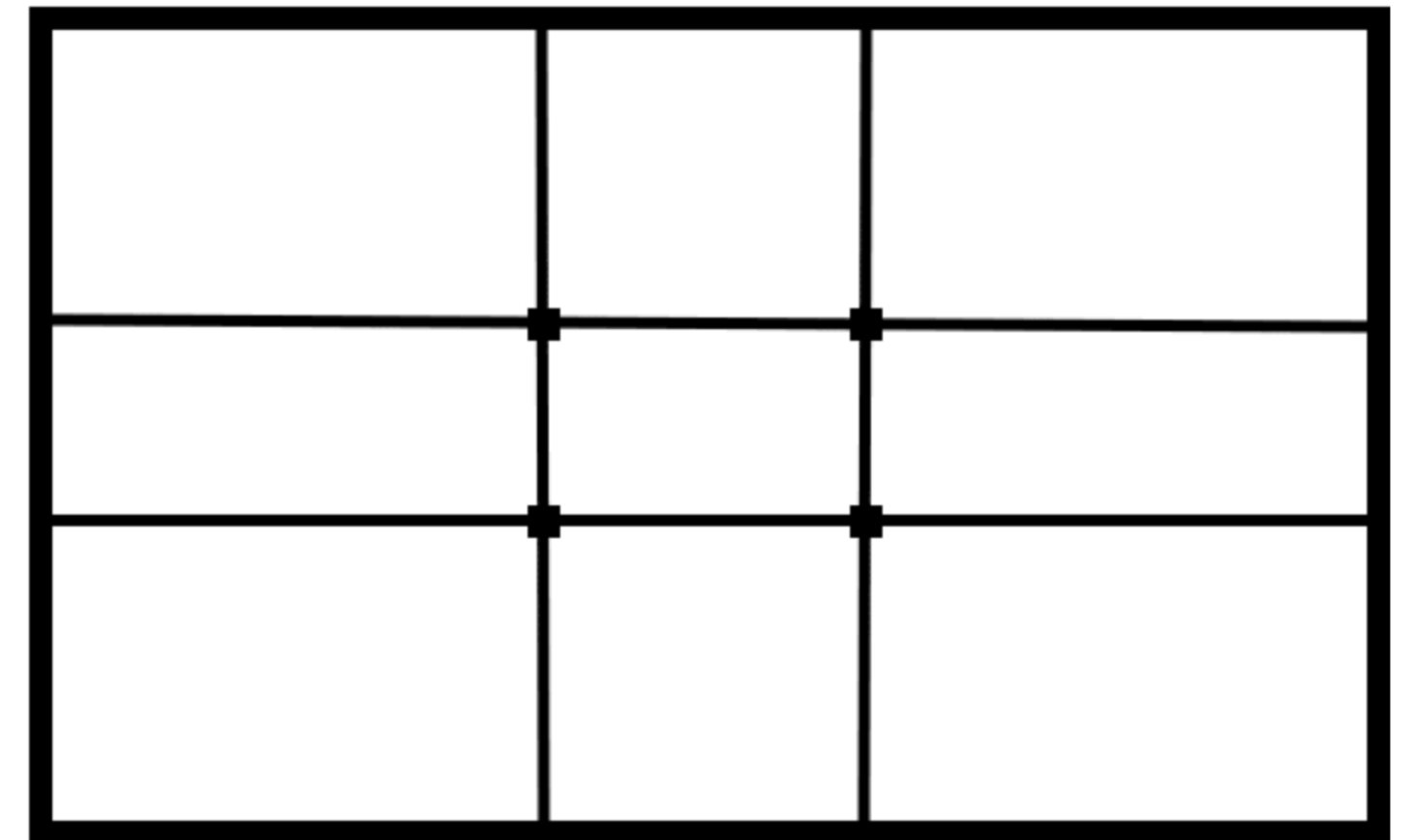
The Golden Spiral

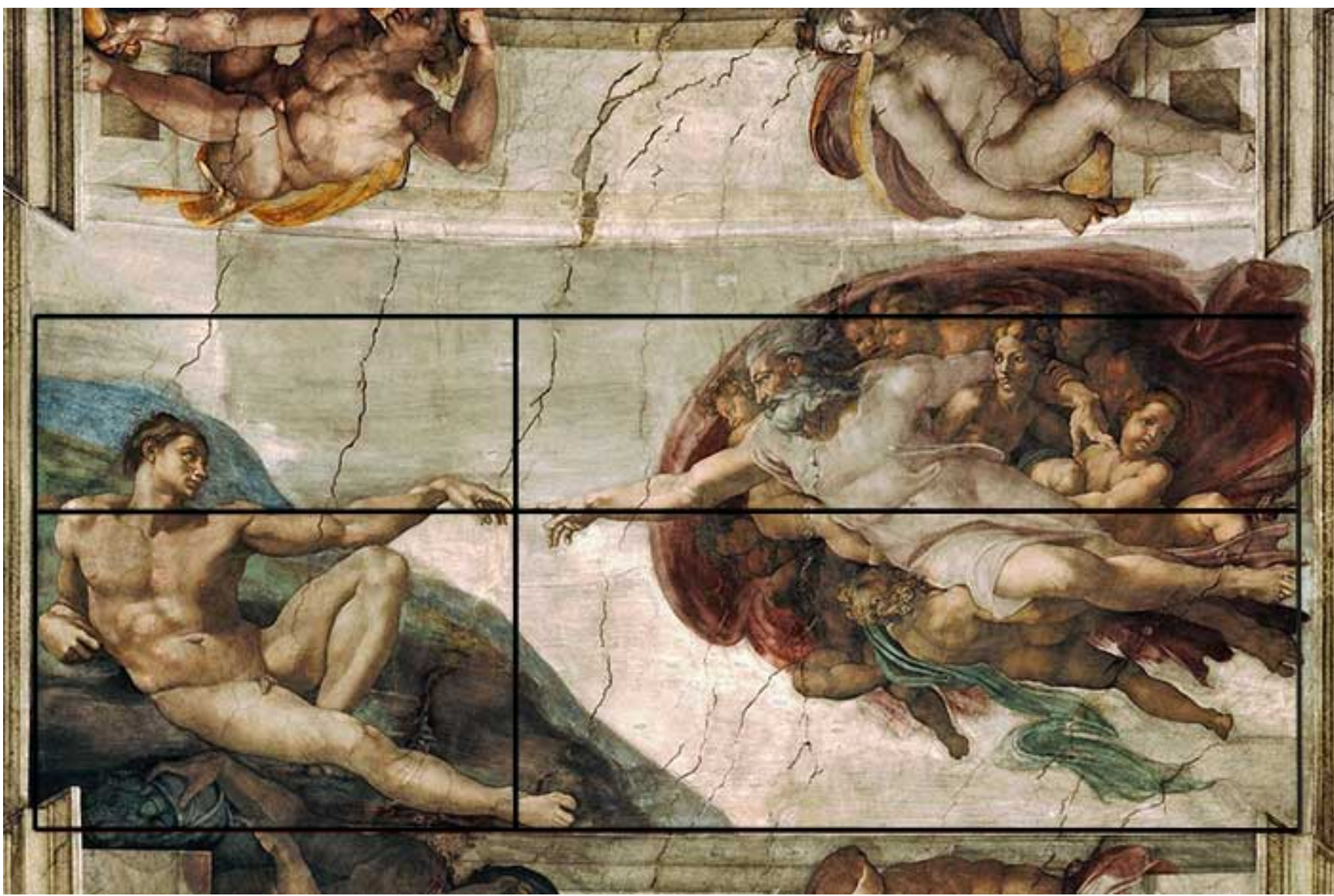


The Eyes Of The Golden Rectangle

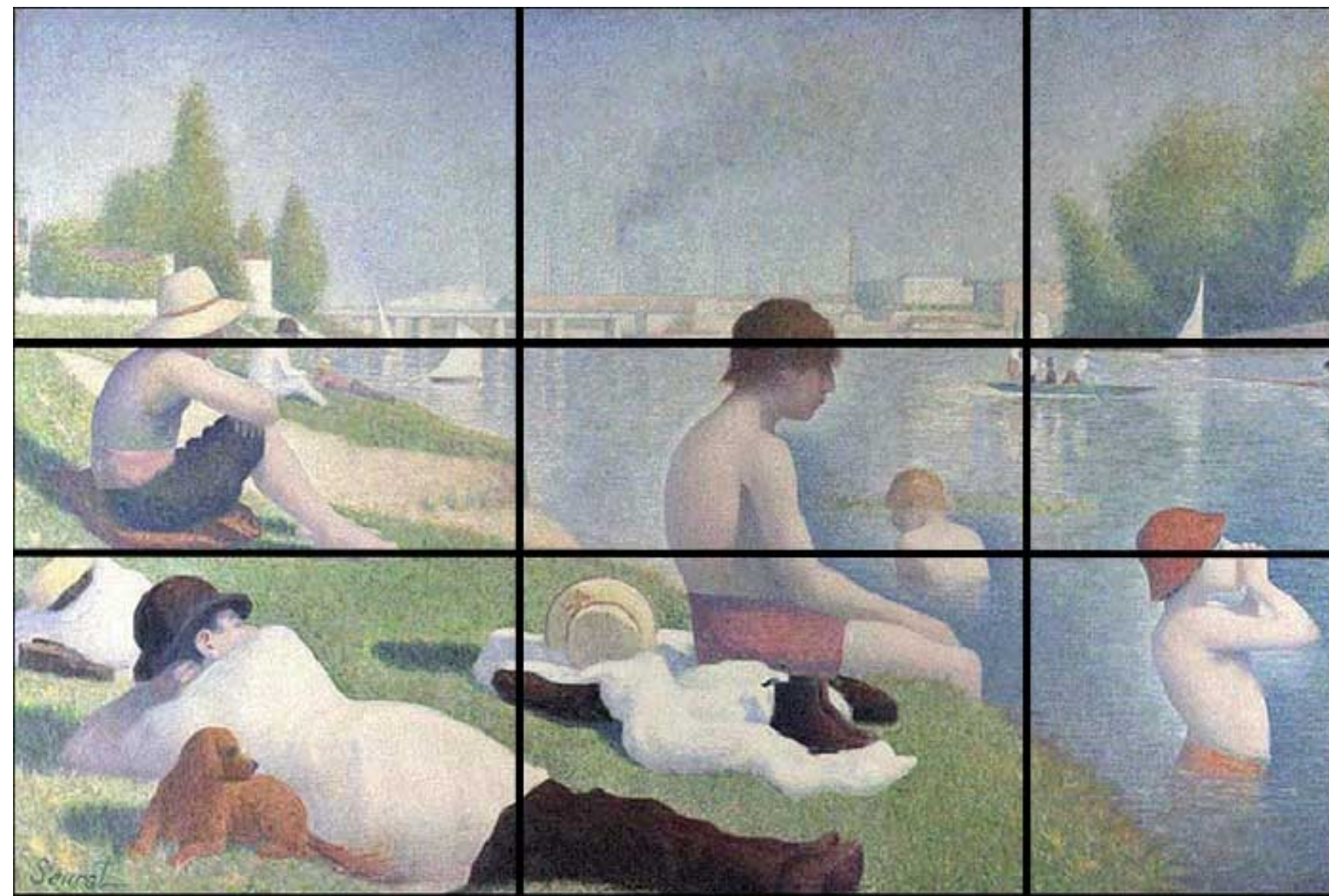


The Golden Section

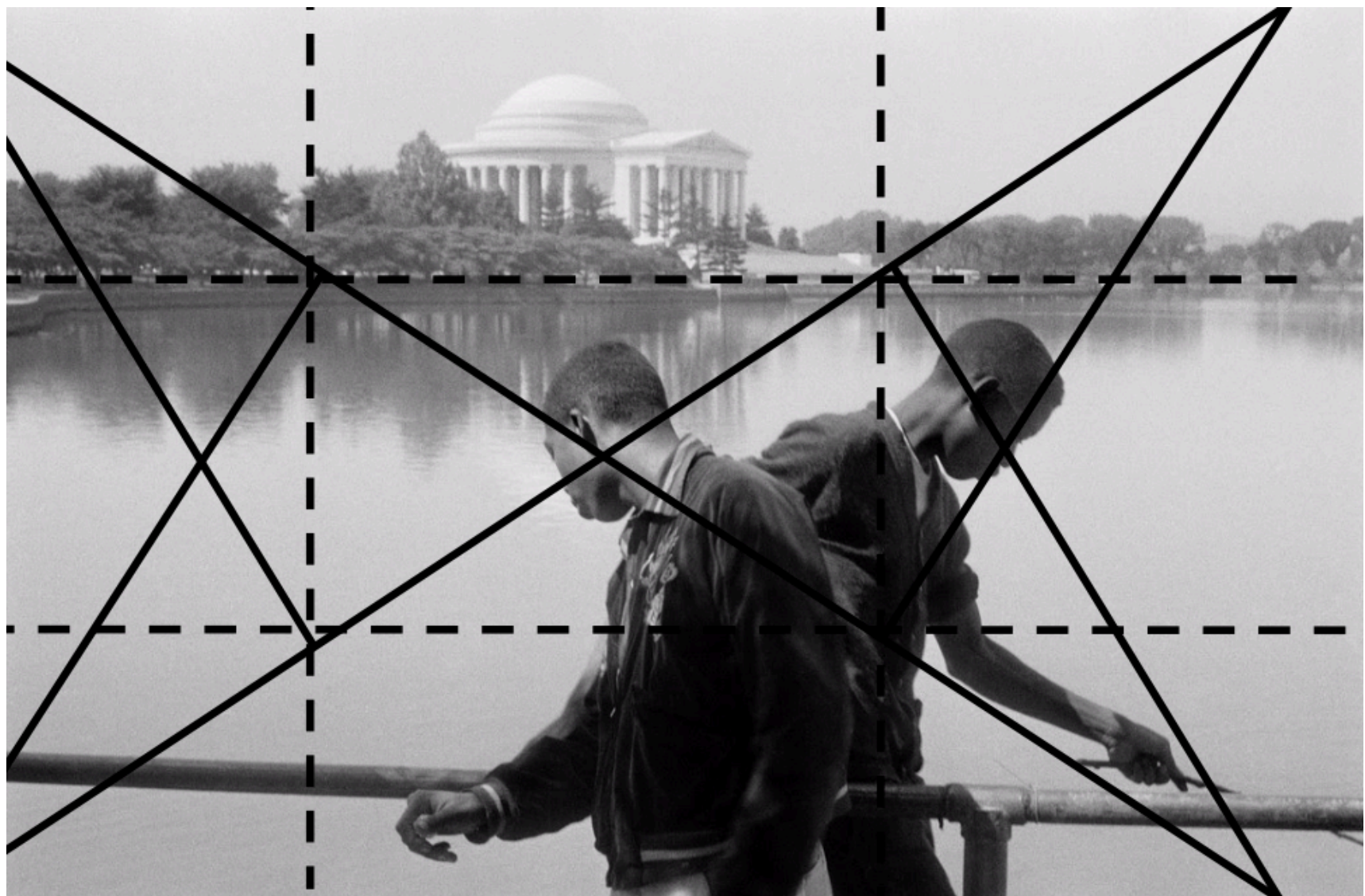




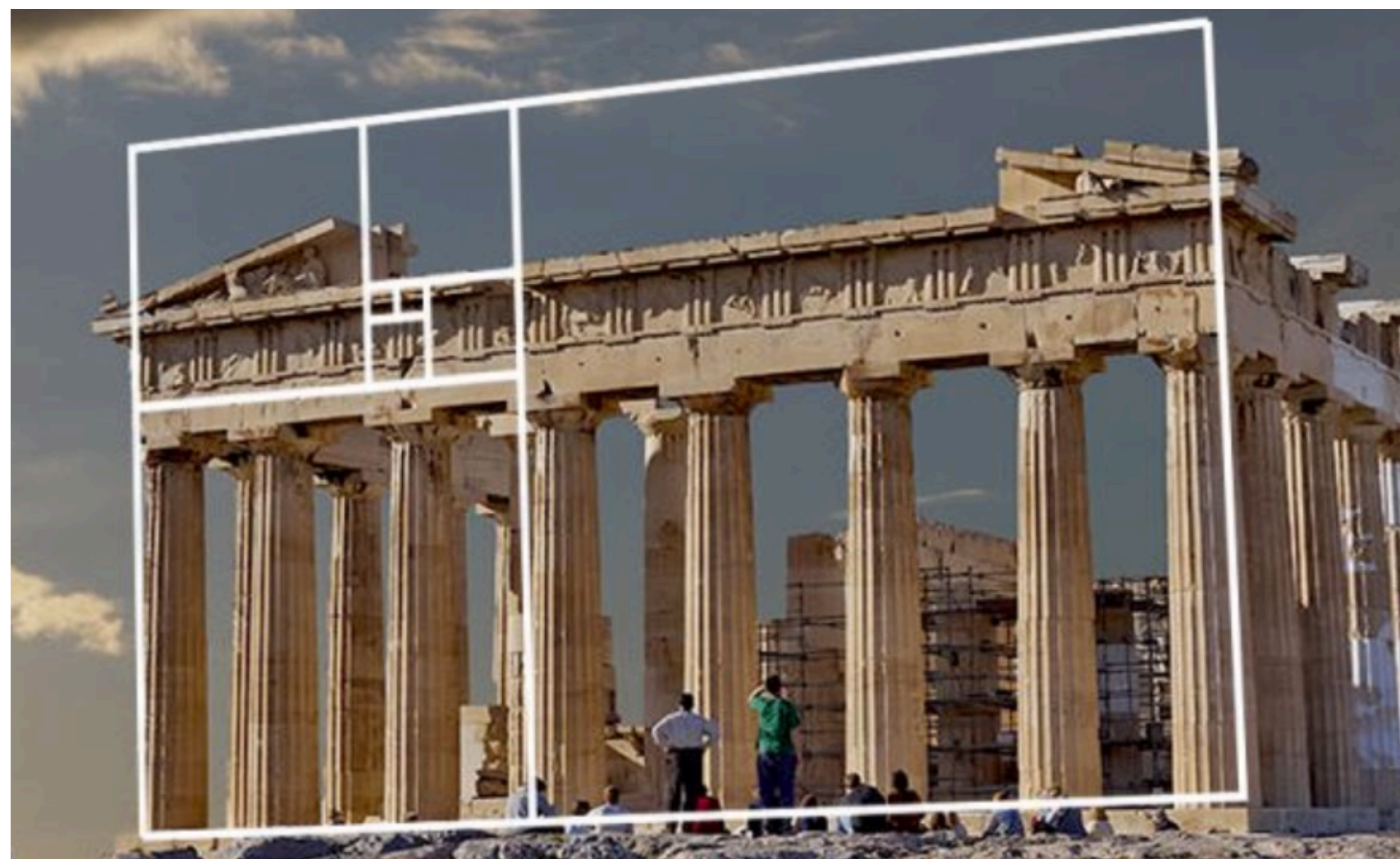
Michelangelo, The Creation of Adam, 1512



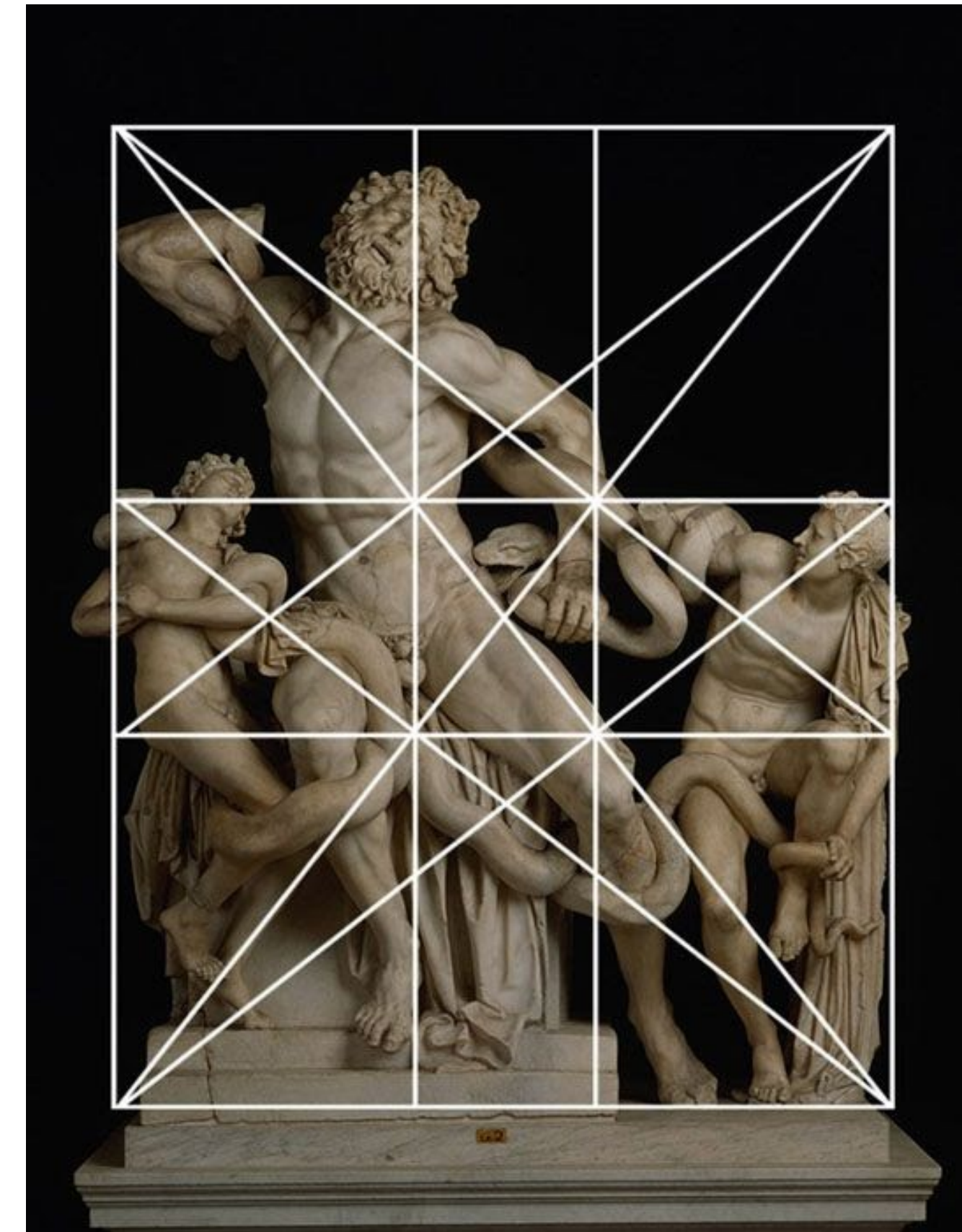
Georges Seurat, Bathers at Asnières, 1884



Henri Cartier-Bresson, Andalucia, 1933



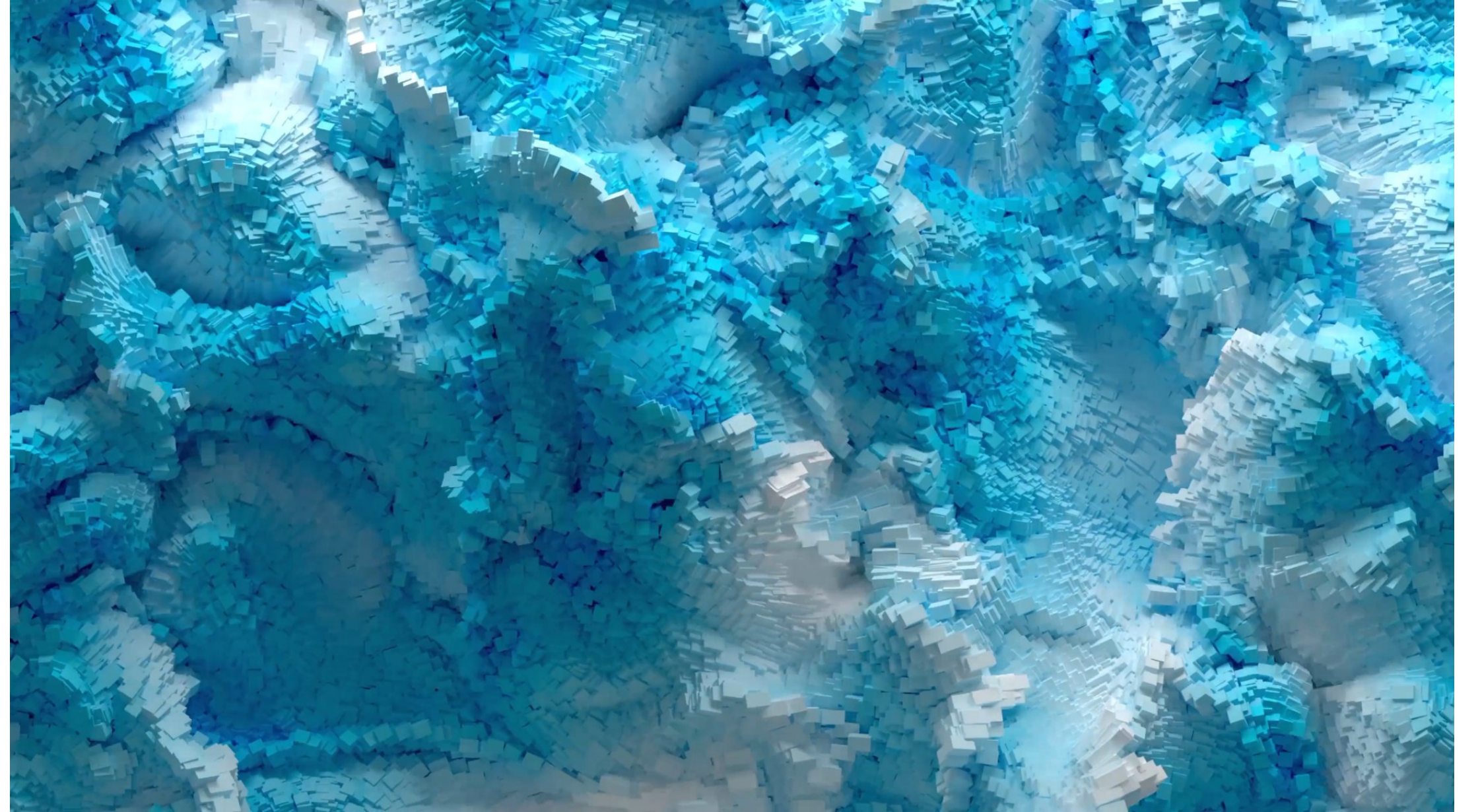
The Parthenon, Acropolis, Athens



Laocöon Cum Filiis



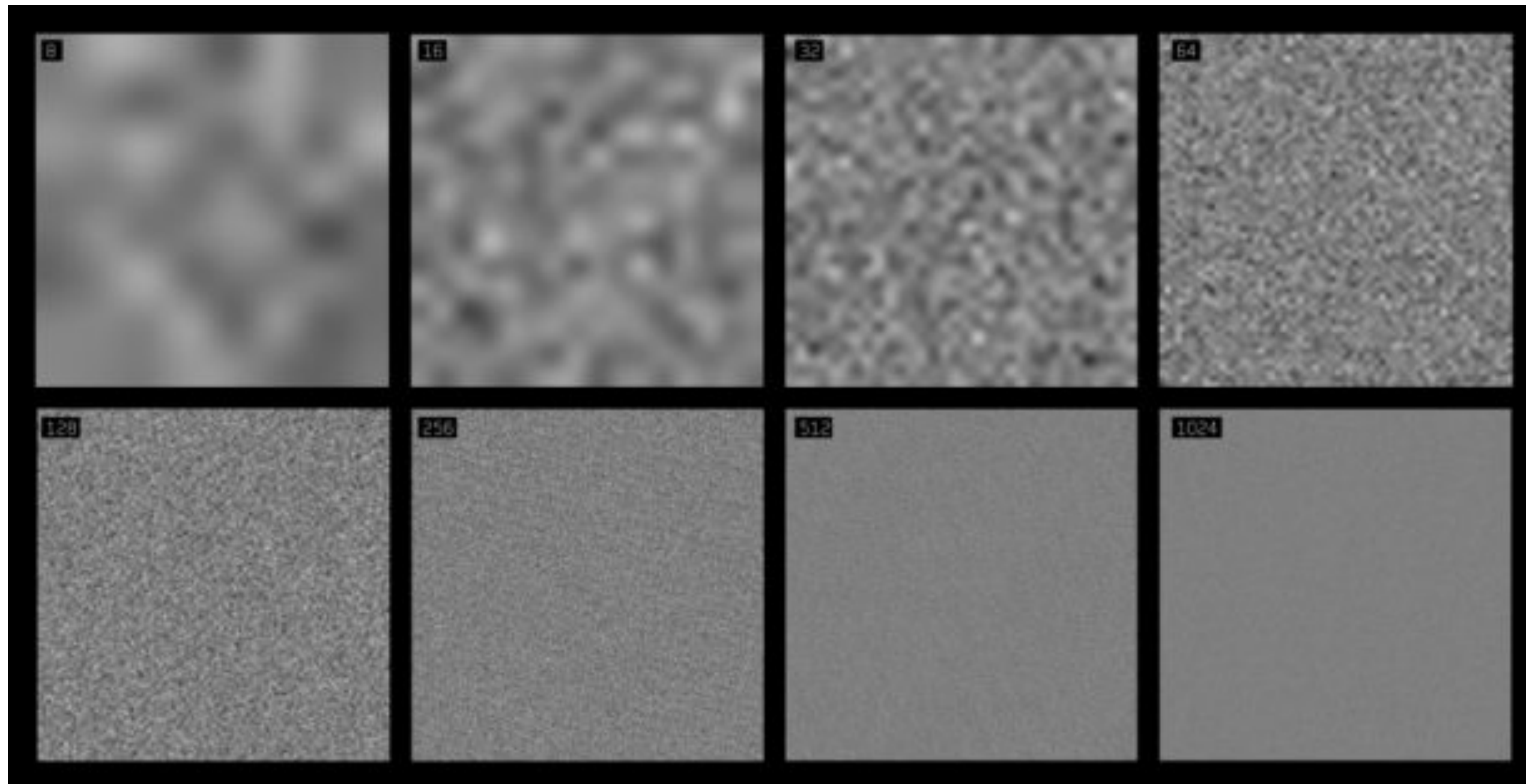
# Refik Anadol - Media Artist



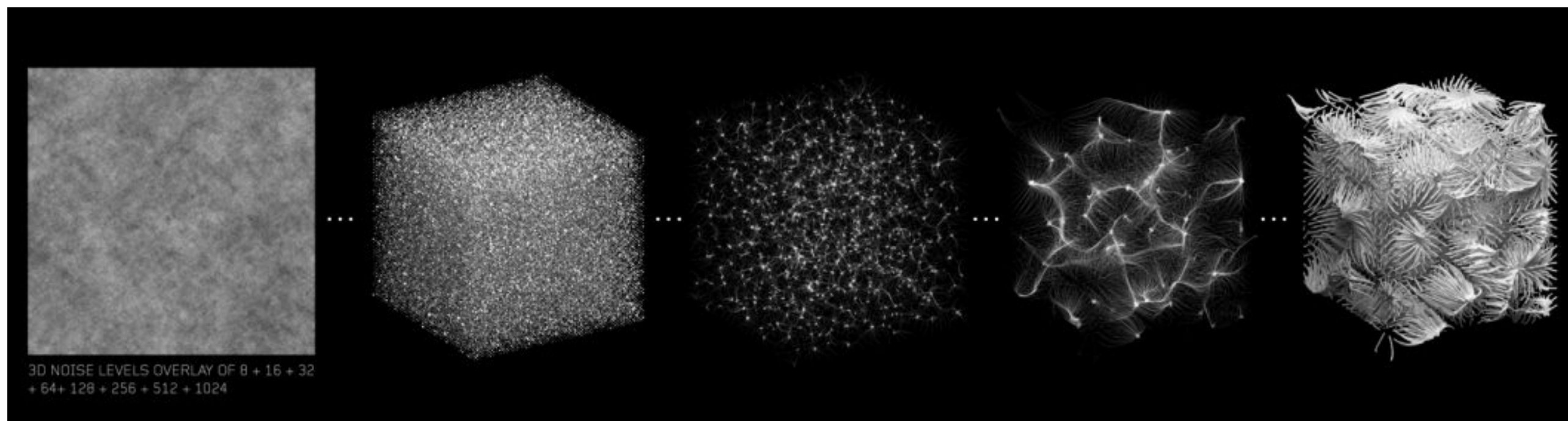
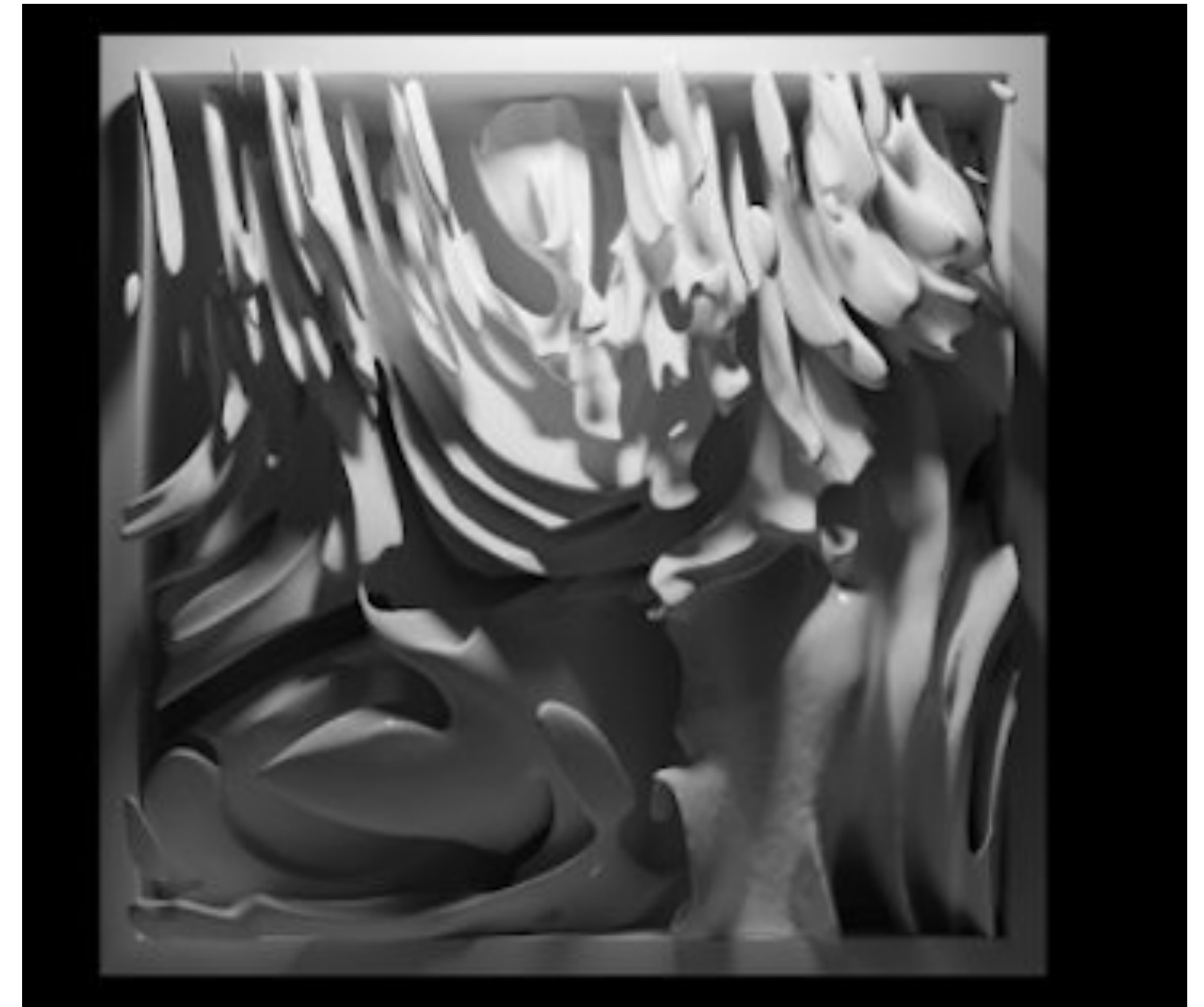


Quantum Memory, Refik Anadol, Data Sculpture

1



3



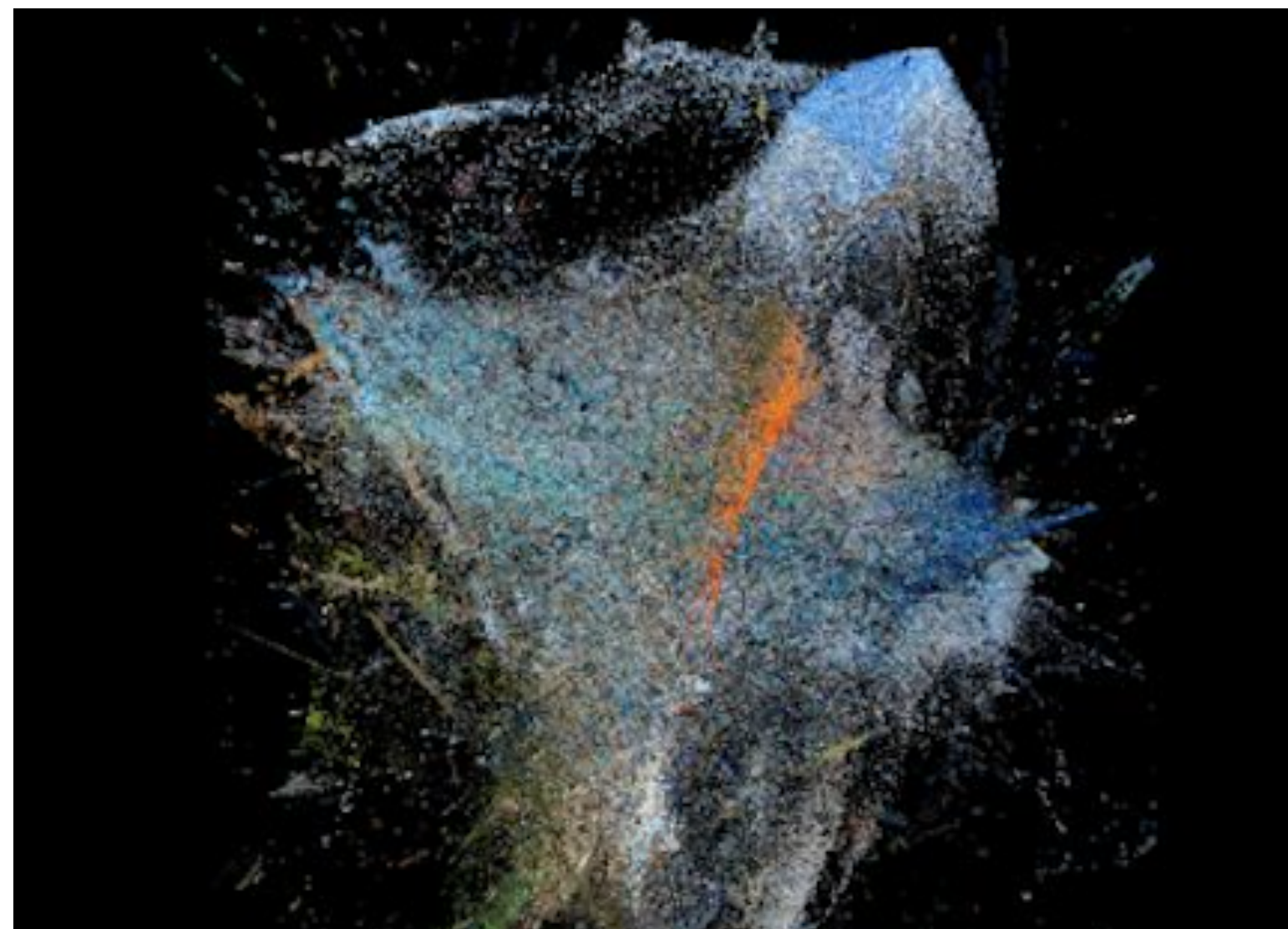
2



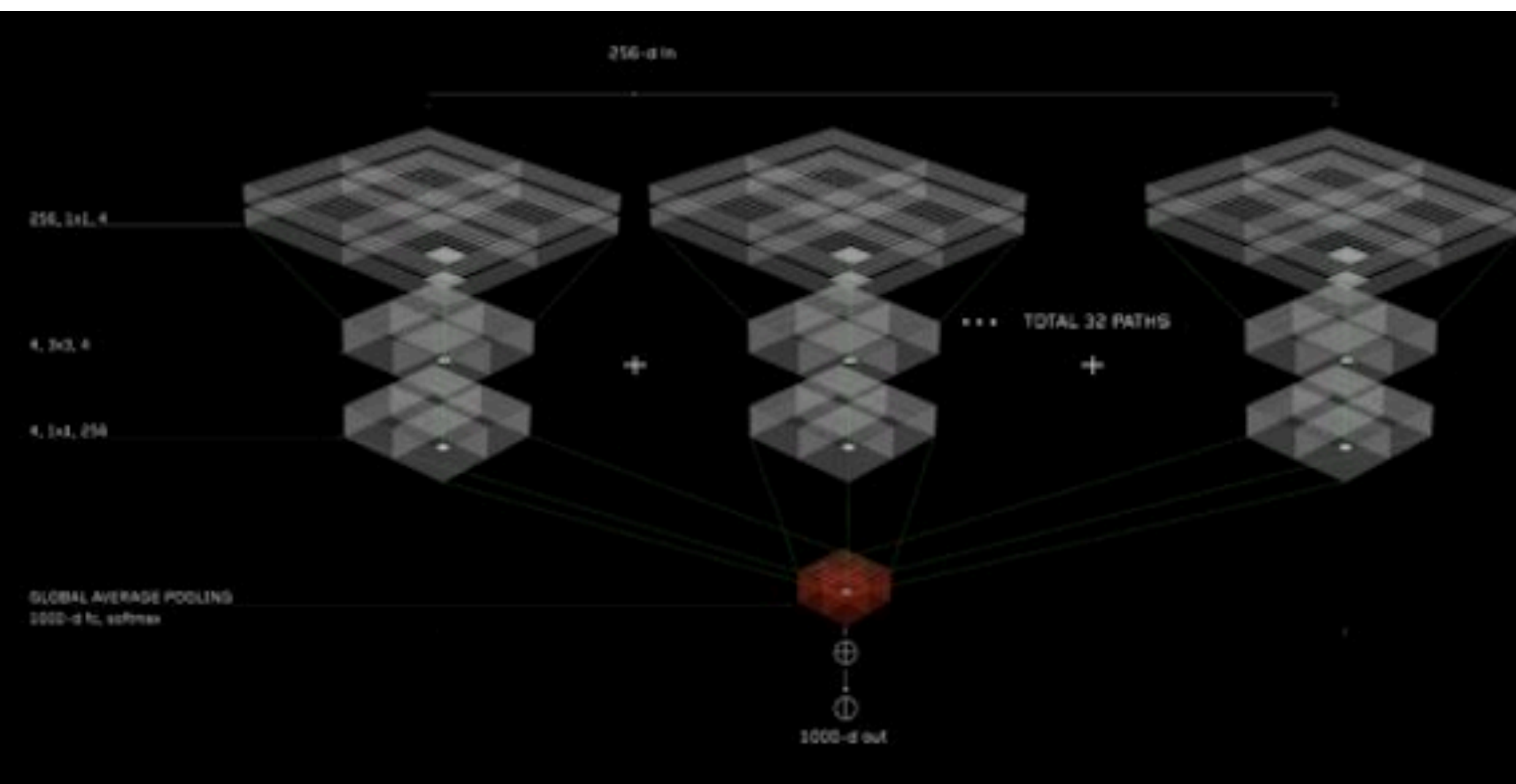
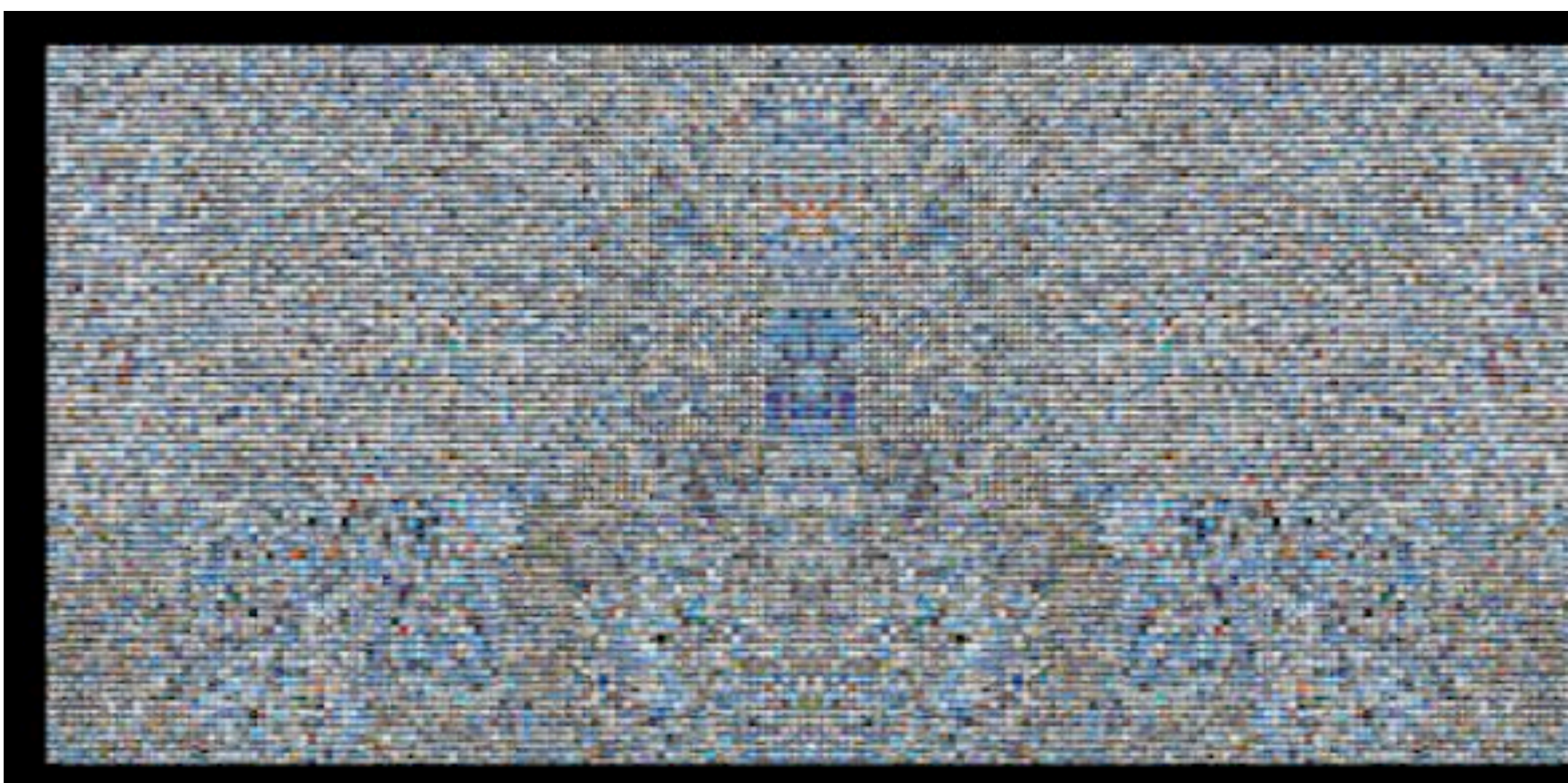
1



3



2



landscape images



vectorized dataset



3d Model



dynamic visual effect

**Thank you**