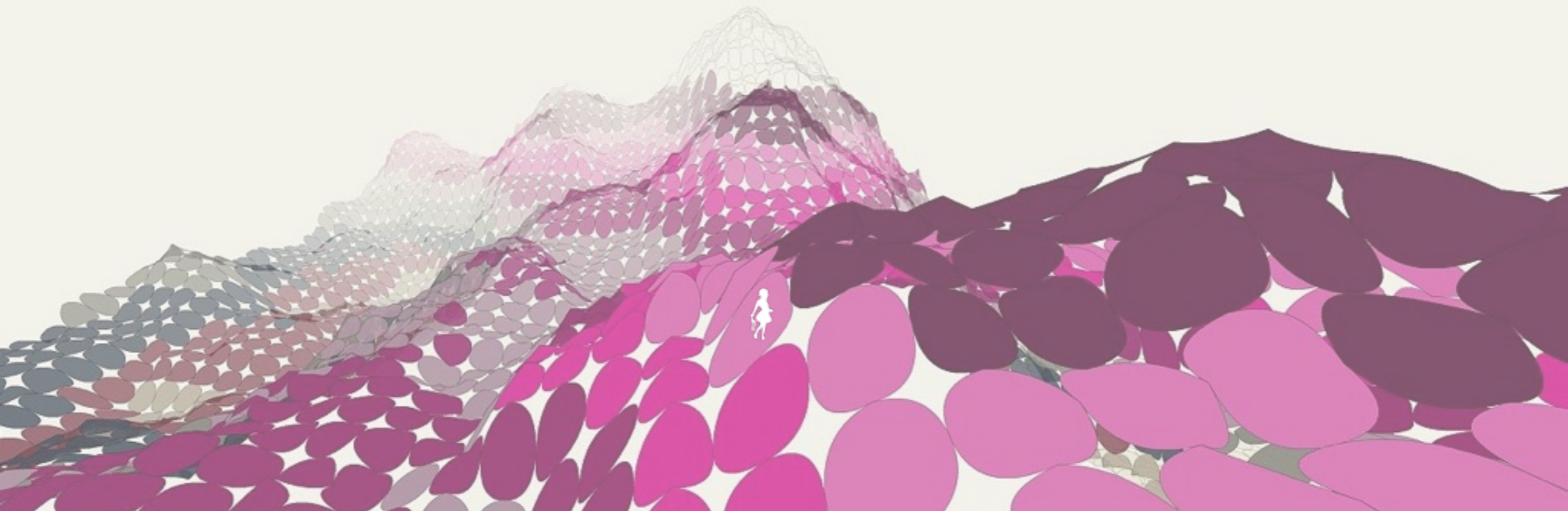
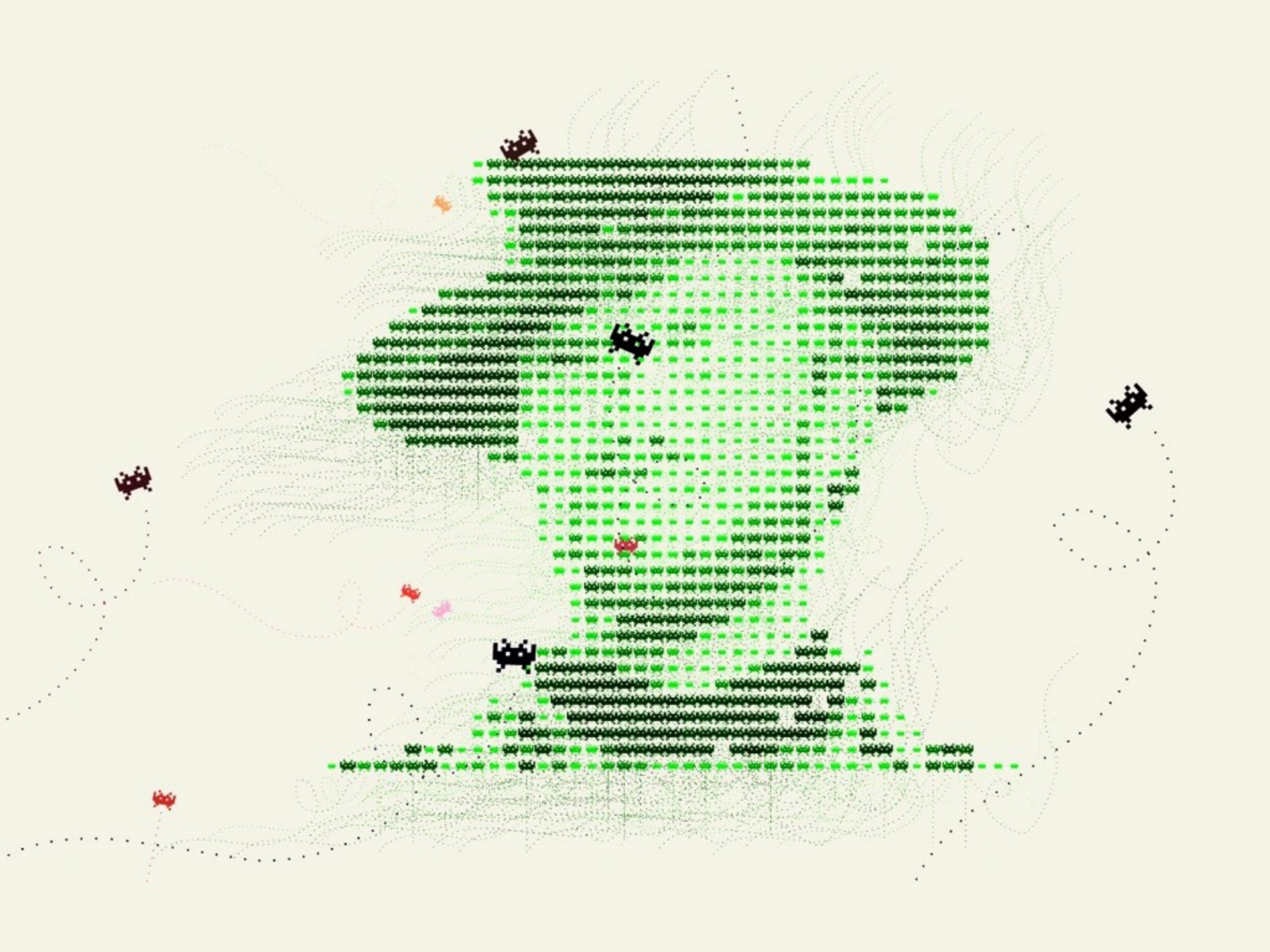
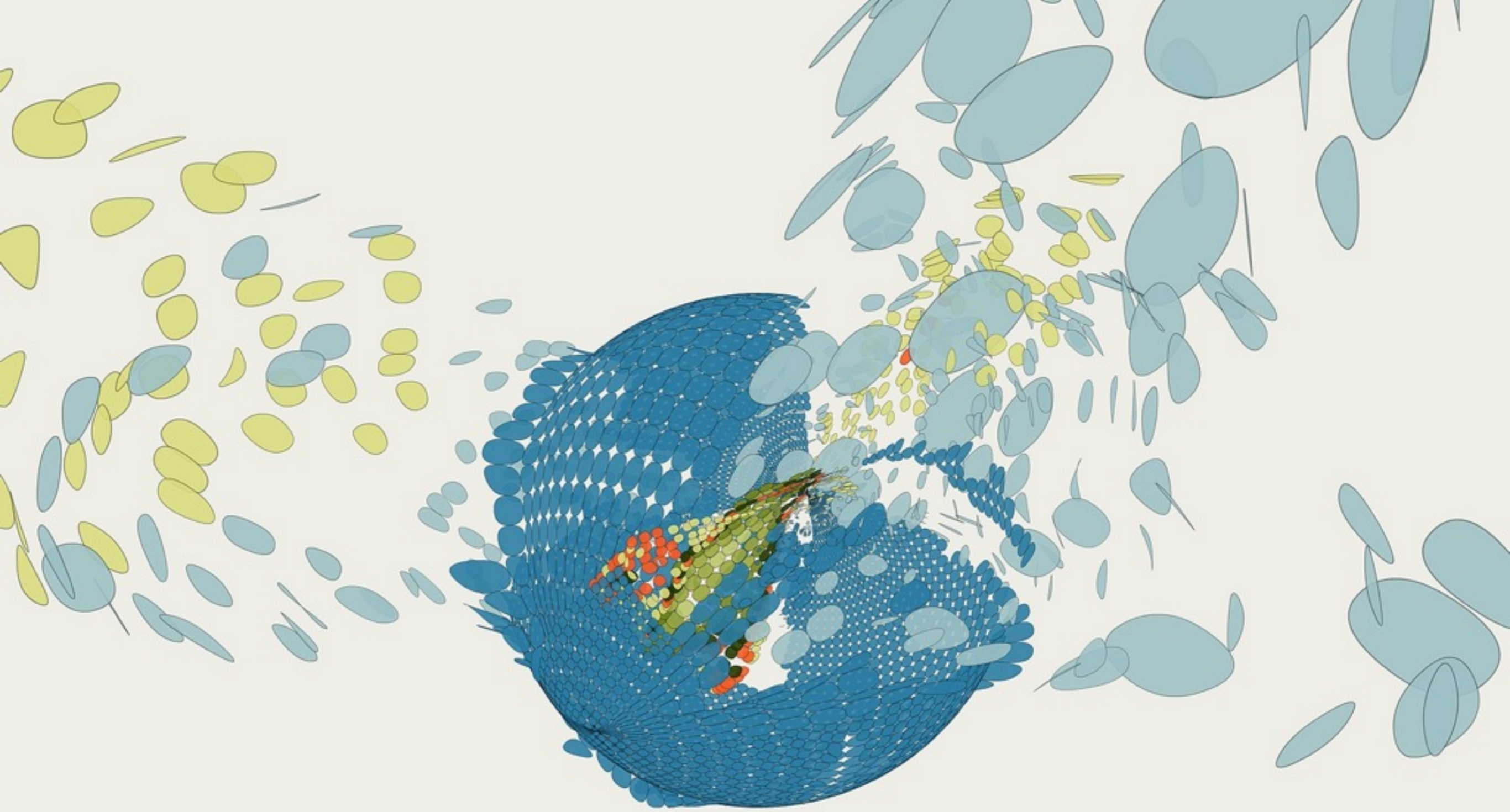


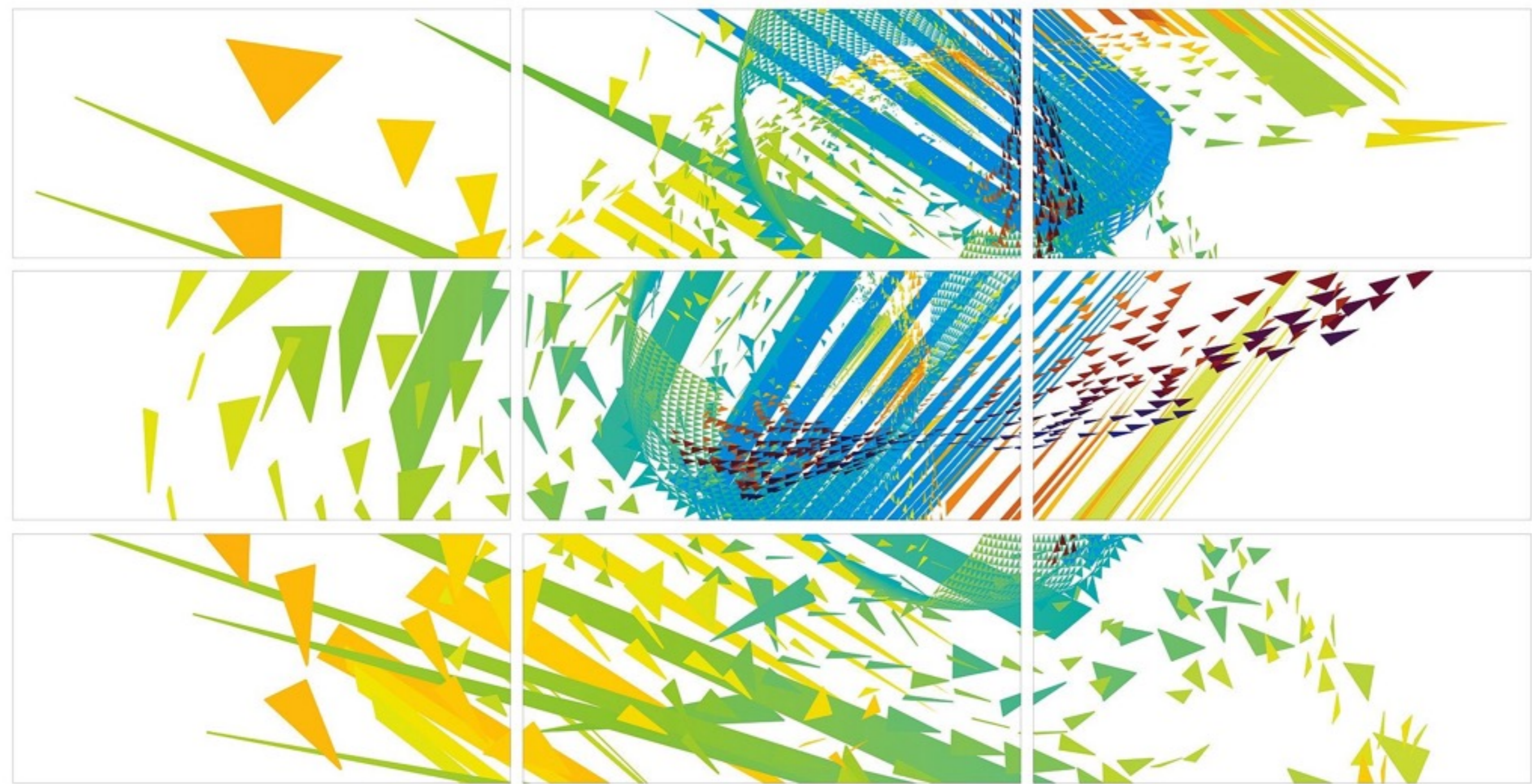
# init::canvas

Simple strategies for generative coding











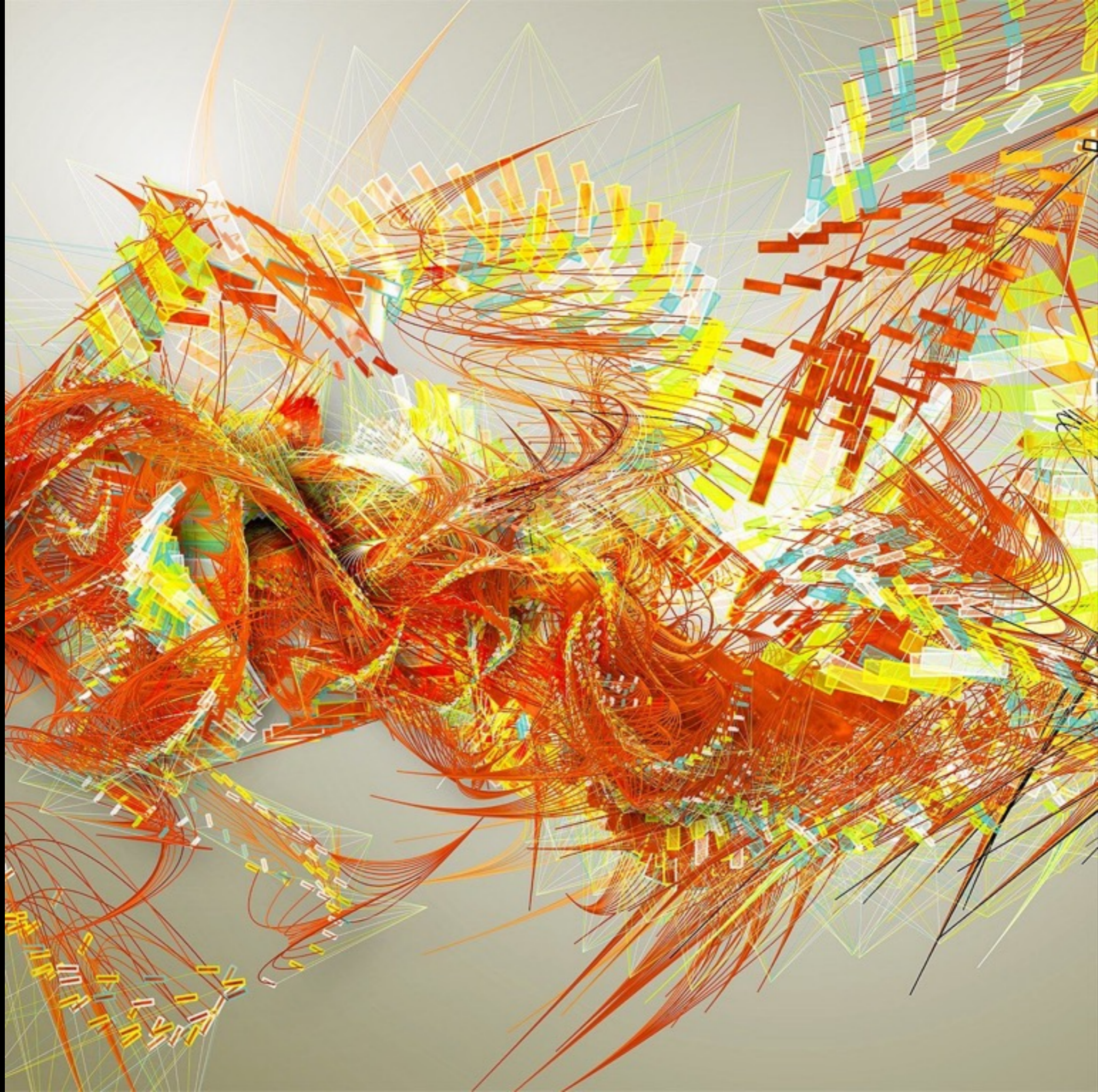
# User input

Drawing stuff with code











# Demo

<http://codebrush.littlemissrobot.com/>


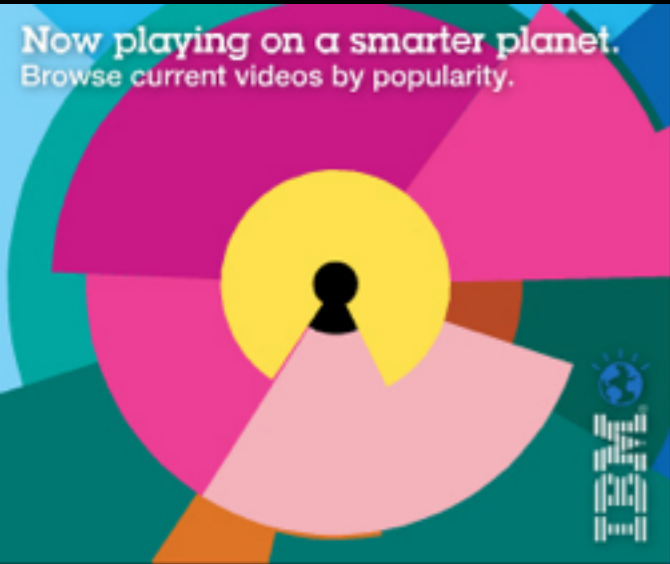
Although possibilities are  
endless, it's just drawing

— You get the idea after a while


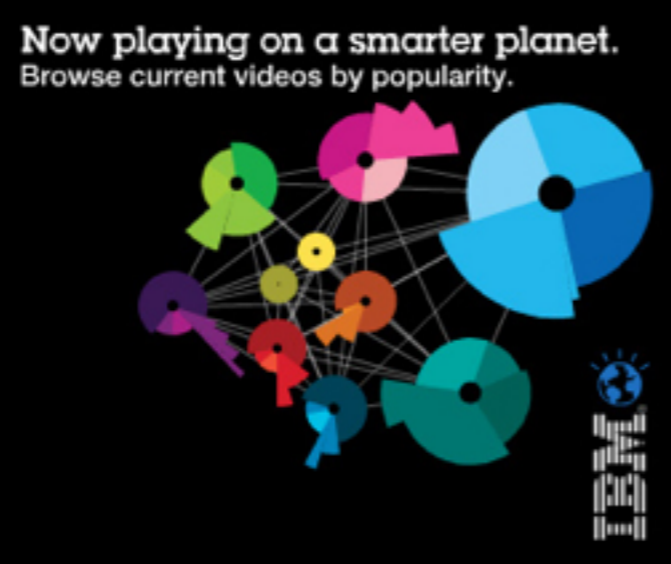
# Some numbers

Data visualization

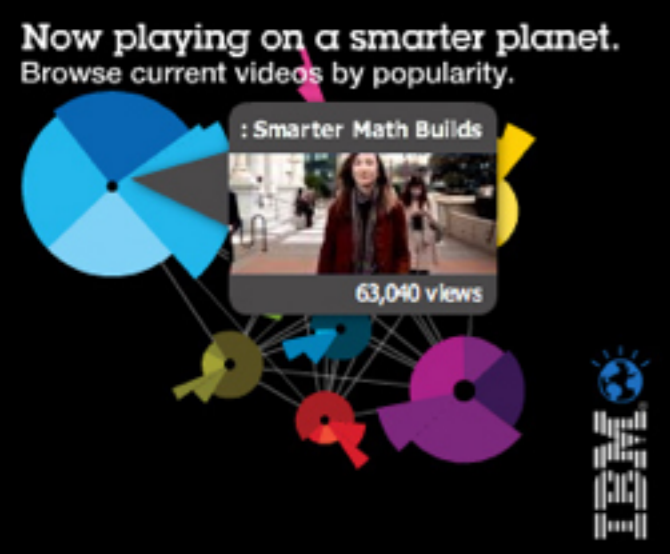
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Browse current videos by popularity.




Now playing on a smarter planet.  
Browse current videos by popularity.



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Browse current videos by popularity.



: Smarter Math Builds  
63,040 views



Refresh 

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Learn more about what IBM is doing to make the world smarter.



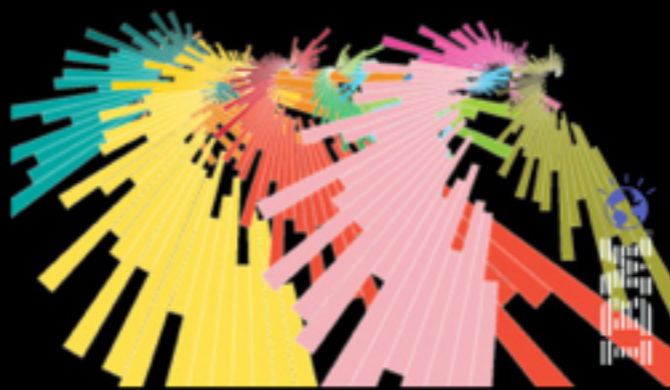
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Browse current videos by popularity.



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Browse current videos by popularity.



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Browse current videos by popularity.



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Browse current videos by popularity.



Now playing on a smarter planet.  
Browse current videos by popularity.



Now playing on a smarter planet.  
Browse current videos by popularity.



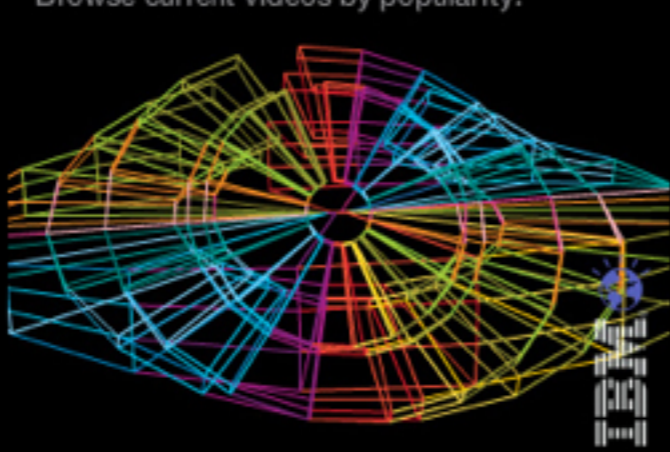
Now playing on a smarter planet.  
Browse current videos by popularity.



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Browse current videos by popularity.



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Browse current videos by popularity.



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Browse current videos by popularity.



Now playing on a smarter planet.  
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## ANALYTICS

# Healthcare Data Visualization

Health decisions sometimes must be made instantly in order to save a life. By monitoring a patient and analyzing the data in real-time, doctors can make more confident, informed decisions. The Toronto Hospital for Sick Children uses a unique data analytics solution in its neonatal intensive care unit to observe changes in the physiological data streams of premature babies.

**Concept:** 3D ECG monitor

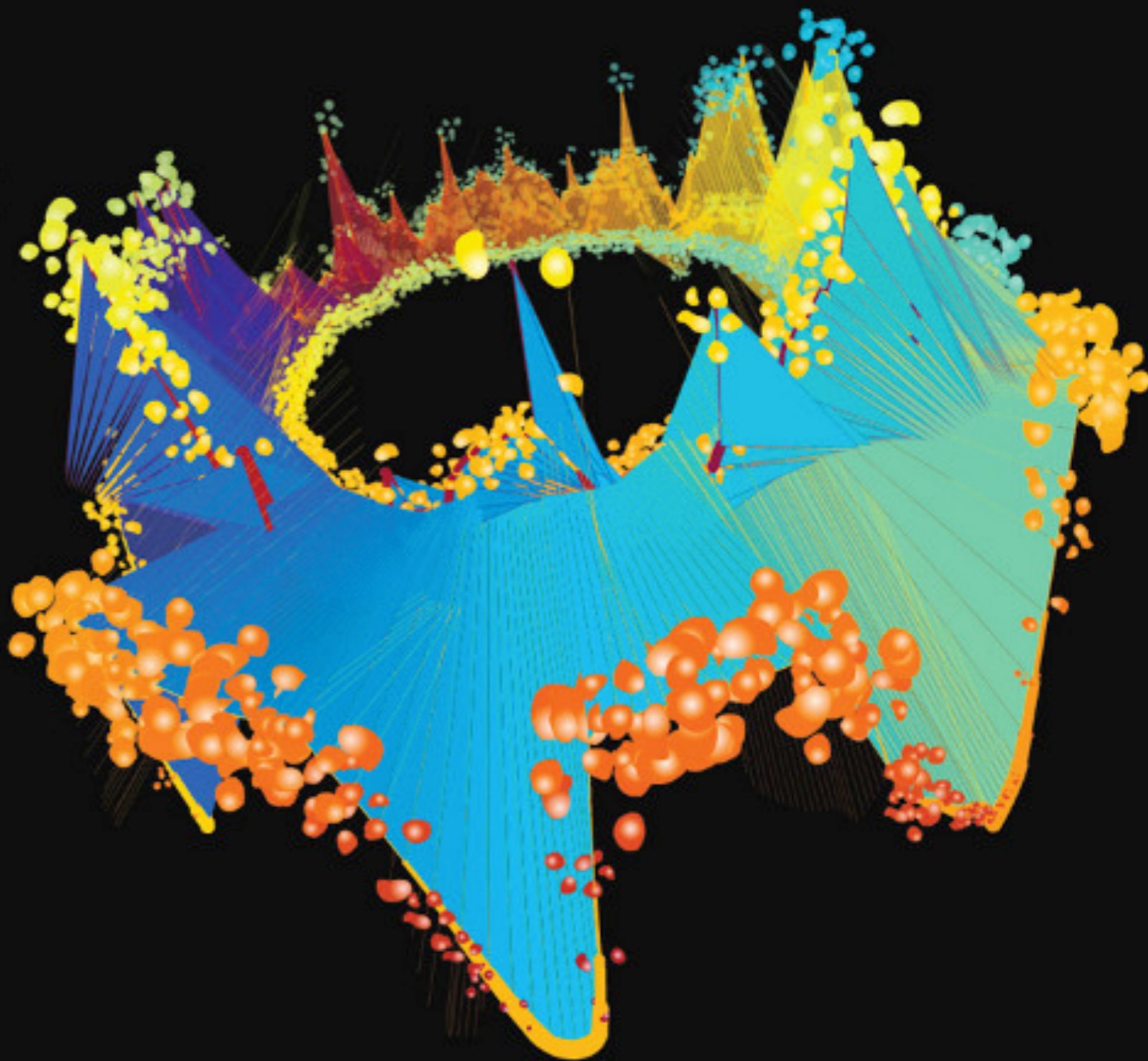
**Dataset:** respiration, PLETH, ECG data from one premature baby for one minute, 10/29/2009

<http://www.physionet.org/pn5/mimic2db/>

**Database:** MIMIC II Waveform Database (mimic2db)

**Records:** n10001/n10001c

**Length:** 1min., from [10:03:05.384 29/10/2009] to [10:04:05.384 29/10/2009]







INSIGHT

# Energy Data Visualization

Our energy grid must have the capacity to handle spikes in consumption. By instrumenting the grid, utilities can track when peaks happen, correlate them to consumer behavior, and plan for the future. As one of the largest metropolitan centers in the world, New York City is also a major energy consumer. Because of the city's size, spikes in consumption are exaggerated, making them easier to identify.

**Concept:** Animation based on the following keywords: Battery, windmill, power grid, engine-like

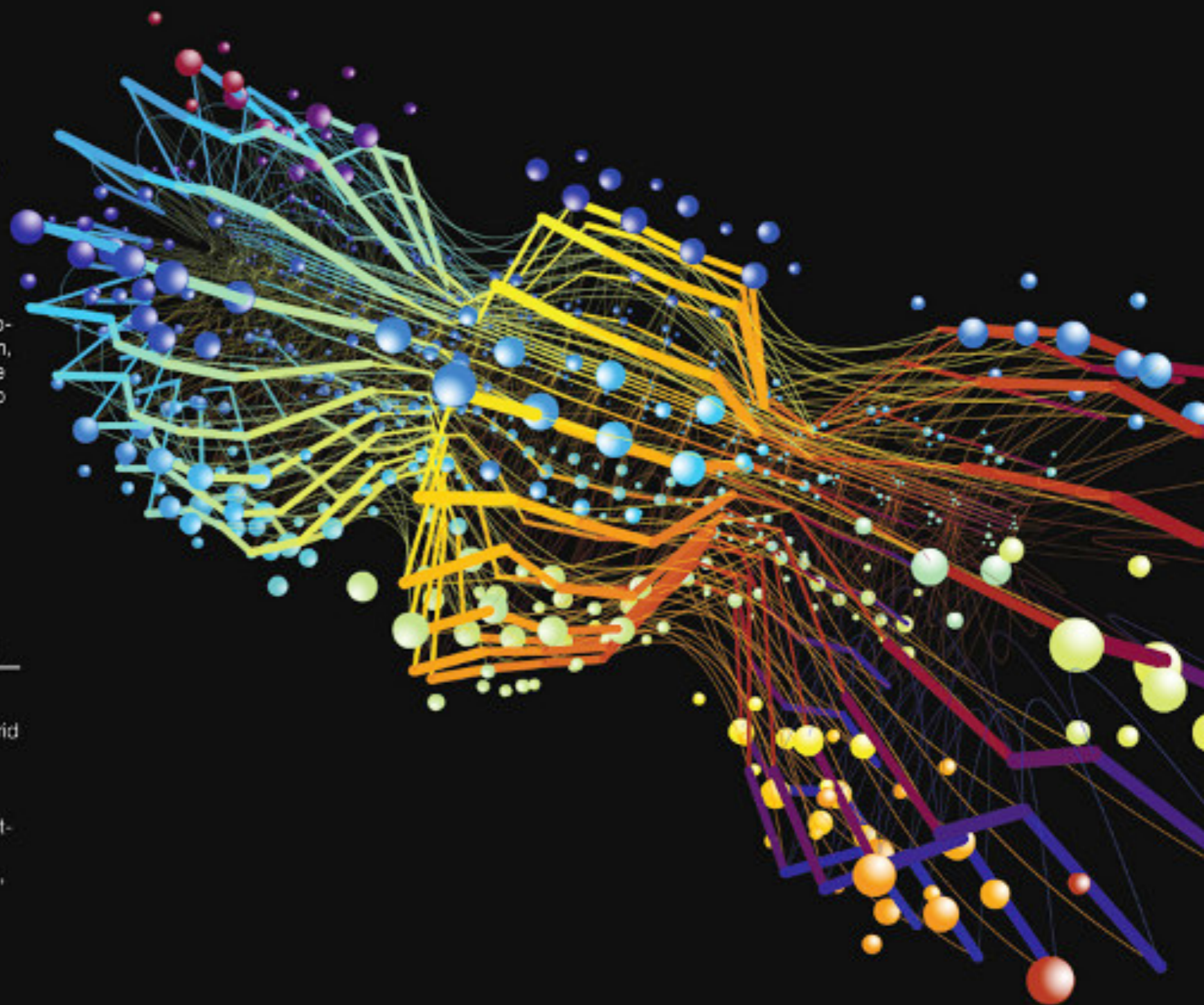
**Dataset:** Hourly NYC power consumption, 2/3/2010 - 3/21/2010

[http://www.nyiso.com/public/markets\\_operations/market\\_data/load\\_data/index.jsp](http://www.nyiso.com/public/markets_operations/market_data/load_data/index.jsp)

**Database:** NYISO Integrated Realtime Actual Load NYC Power Grid

**Entries:** From 03/02/2010, 0:00 to 21/03/2010, 23:00

The 3D shape consists of circles (built with 24 points, each representing one hour of a 24 hour day) that form a tube. The thickest lines connect the same hour of the different days. As the animation builds, we see the fluctuation in energy consumption as days pass.







# Why data **MATTERS**

On a smarter planet, everything from traffic to utilities to healthcare information can be monitored and analyzed for insight

[Find out how IBMers are harnessing the power of data](#)

## Conversations

**Make sense of what you learn— as fast as you learn it**  
New data methods are transforming what we think of as intelligence

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- Journalists
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**Innovation & integration at every level**  
→ Optimize your workload



Start here

## Three big ideas

1. Instrument the world's systems
2. Interconnect them
3. Make them intelligent

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**Make sense of what you learn— as fast as you learn it**  
New data methods are transforming what we think of as intelligence

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- CFOs
- IBM Business Partners
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- Journalists
- Job seekers
- Developers

**Innovation & integration at every level**  
→ Optimize your workload

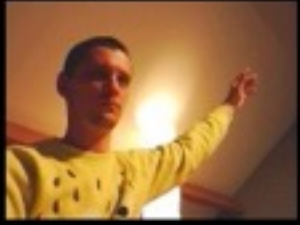
[Julia Grace, User Sciences and Experience](#)

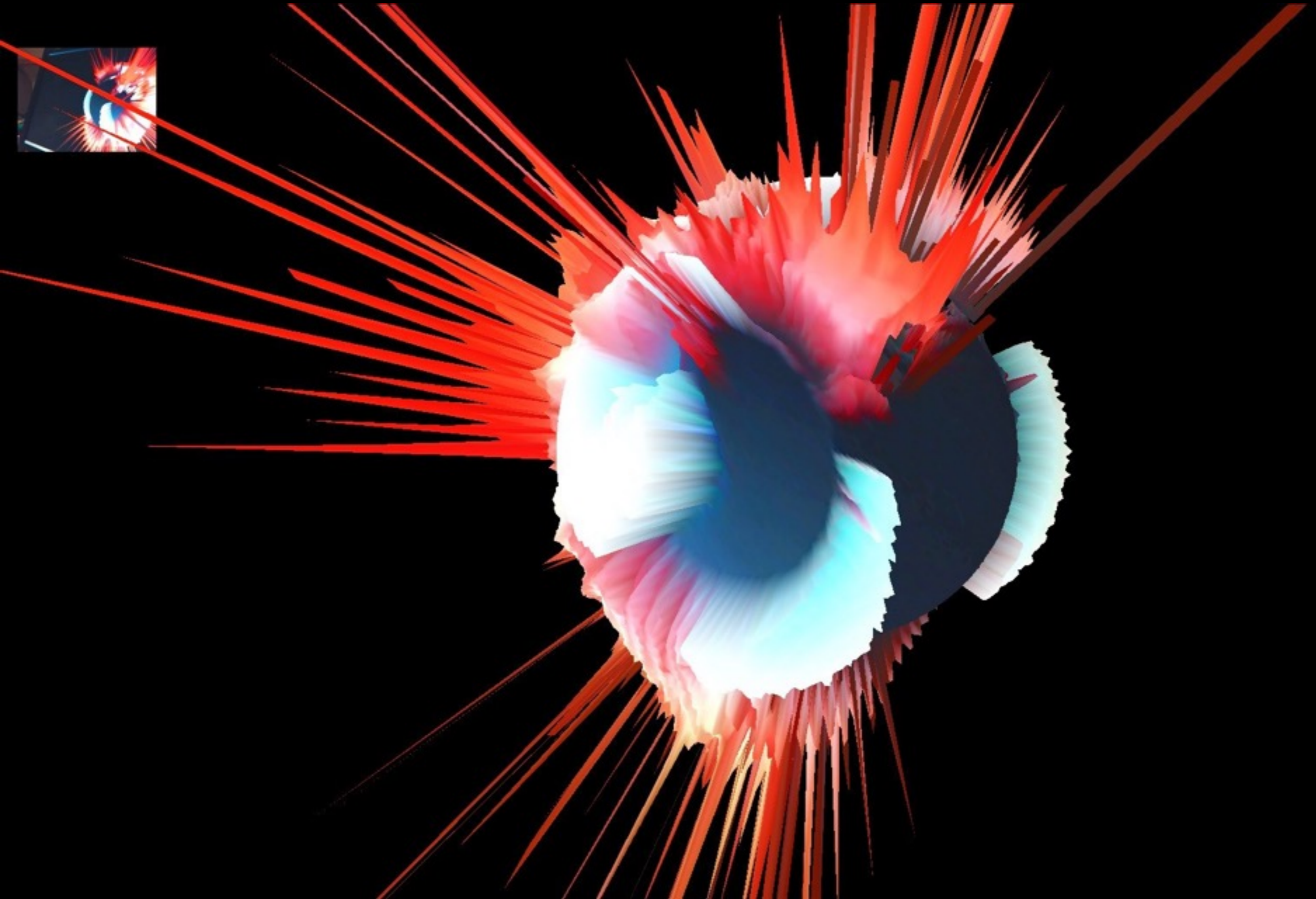
# Datasets shape ideas, less happy accidents

— Sometimes needs pre-processing

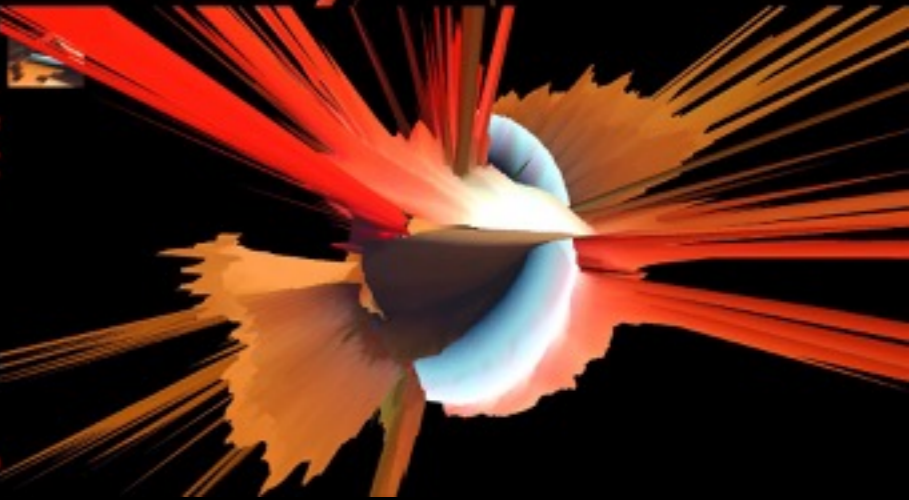
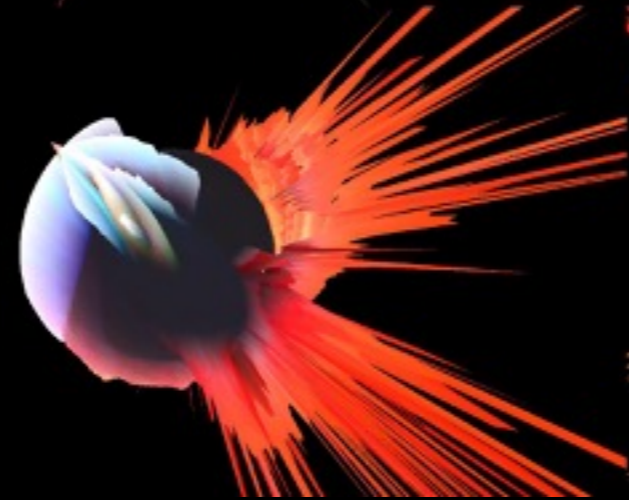
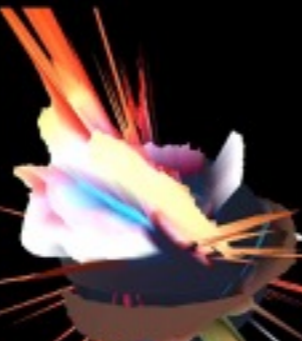
# Pixel mania

Images, webcam & others





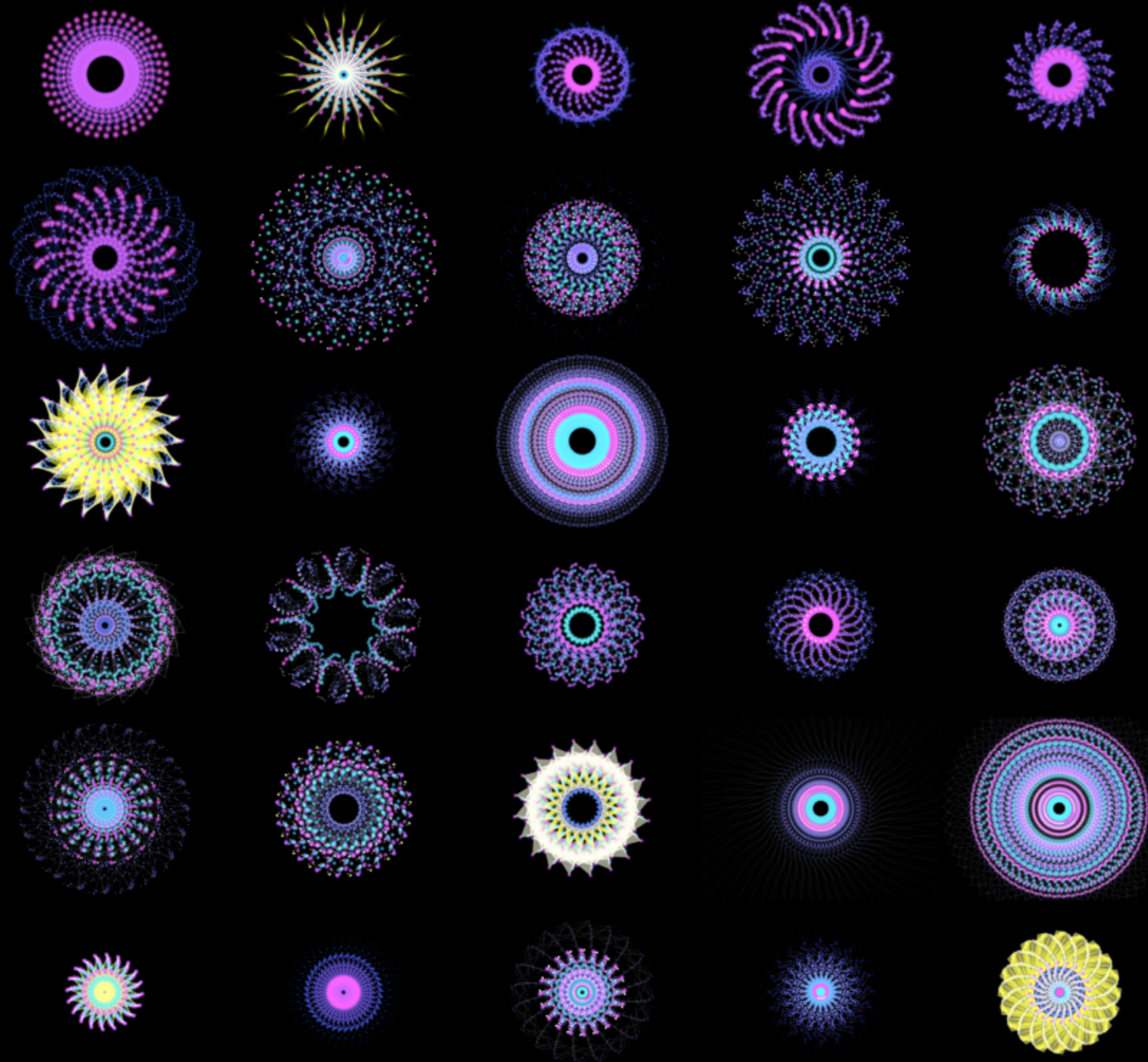




# Demo

<http://gwenvanhee.github.io/mirror/>

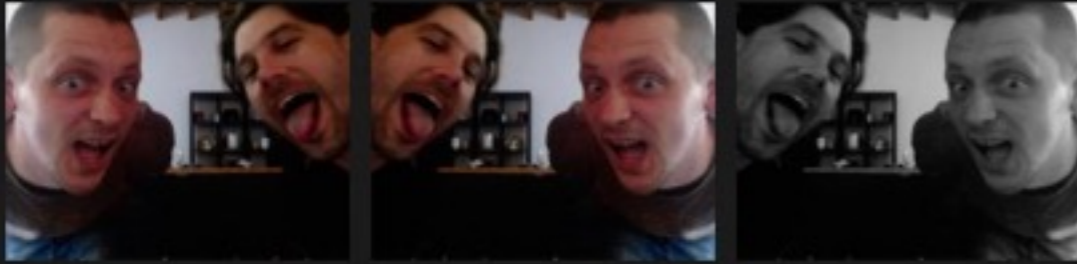




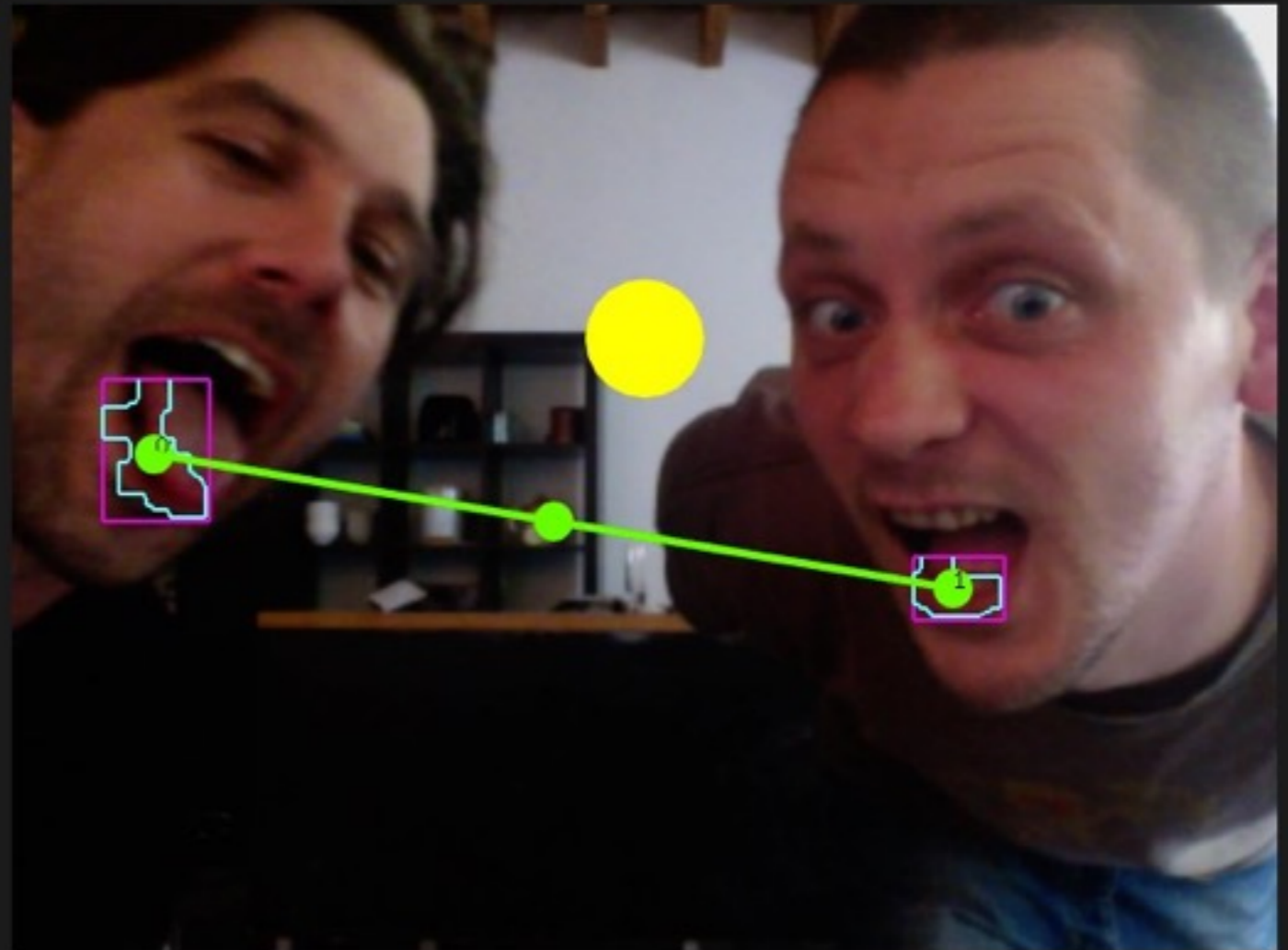
FPS: 59.9243

THRESHOLD: 25

ROI to color track



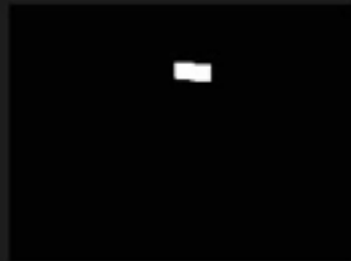
RED BALANCE: 230 (+/-)



FPS: 94.7412



RED BALANCE: 200



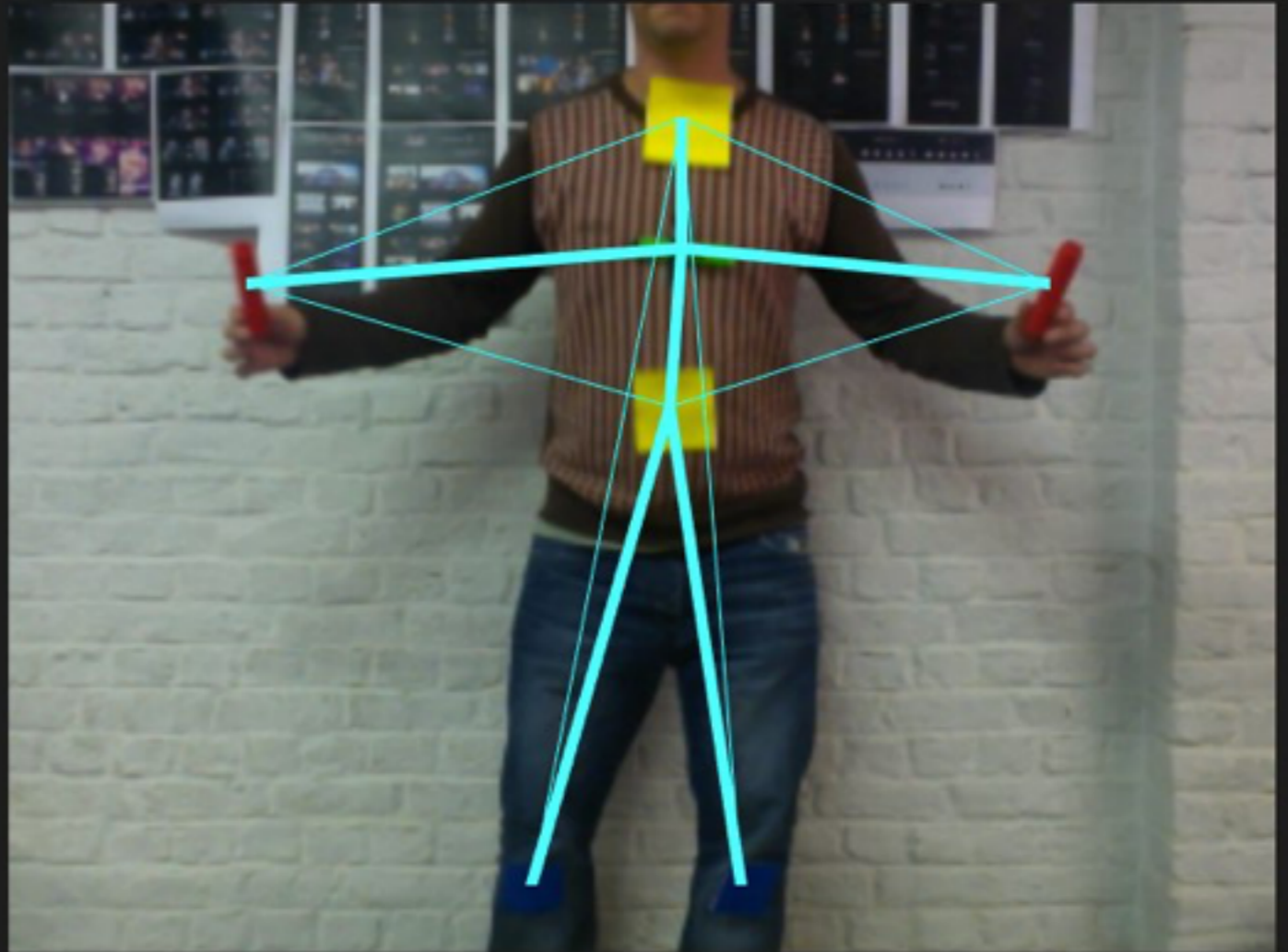
GREEN BALANCE: 200



BLUE BALANCE: 200



BLUE BALANCE: 200



<https://vimeo.com/39654062>

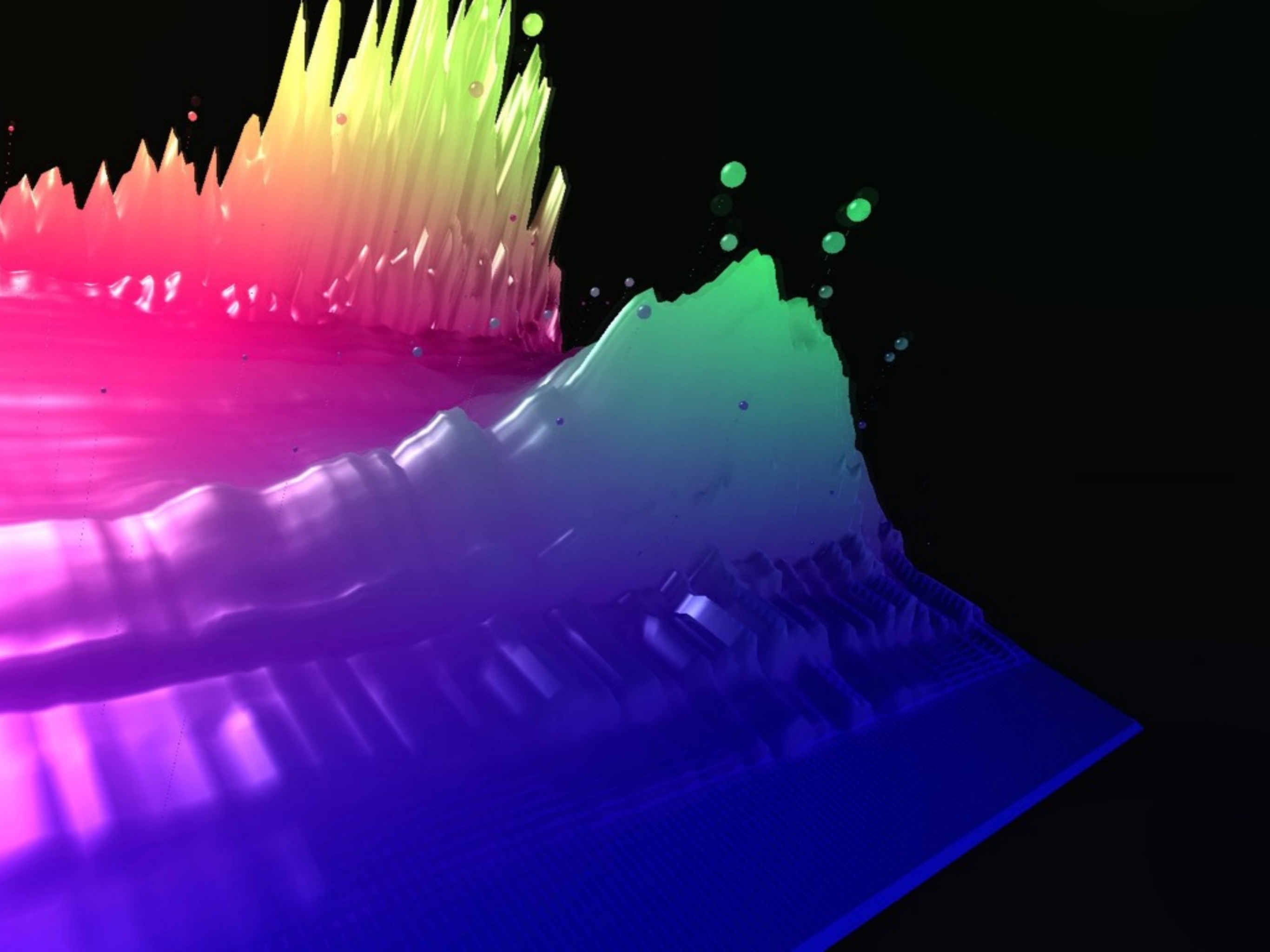
Direct output, always  
different and lot's of fun

— Best used in stealth-modus



# Audio waves

Sound visualization

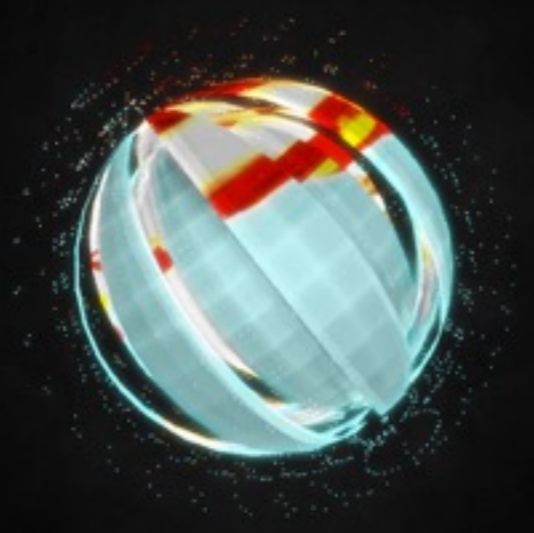




FPS: 59.8409  
Scene: 0  
Audio: 0.081459



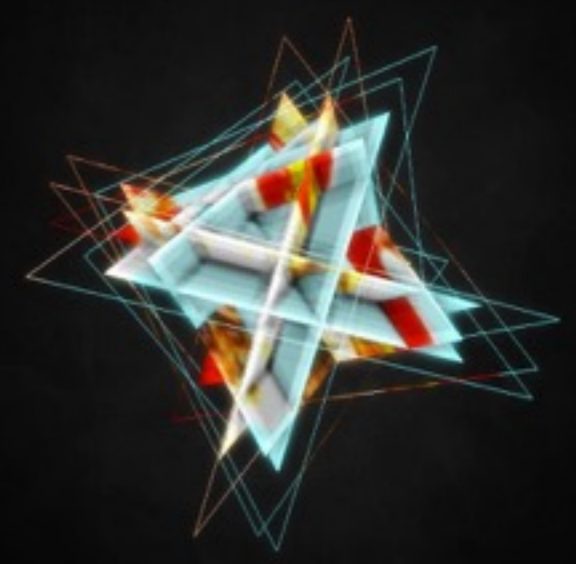
FPS: 59.8521  
Scene: 1  
Audio: 0.094095



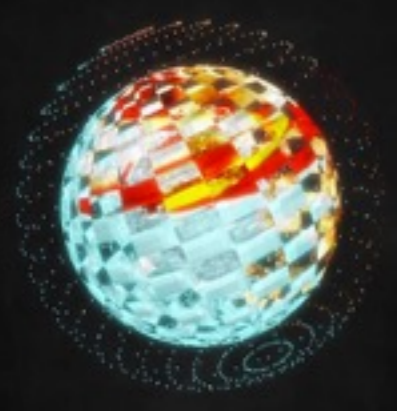
FPS: 59.9871  
Scene: 3  
Audio: 0.066154



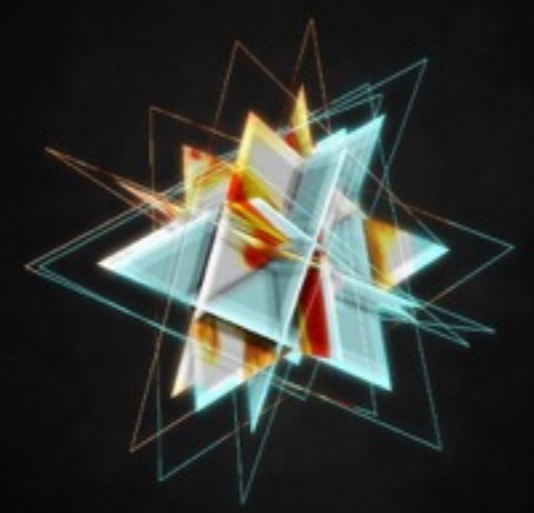
FPS: 59.9494  
Scene: 2  
Audio: 0.061626



FPS: 60.1421  
Scene: 1  
Audio: 0.67003



FPS: 59.9932  
Scene: 2  
Audio: 0.016335



FPS: 59.8782  
Scene: 1  
Audio: 0.049782



FPS: 59.9207  
Scene: 1  
Audio: 0.767147

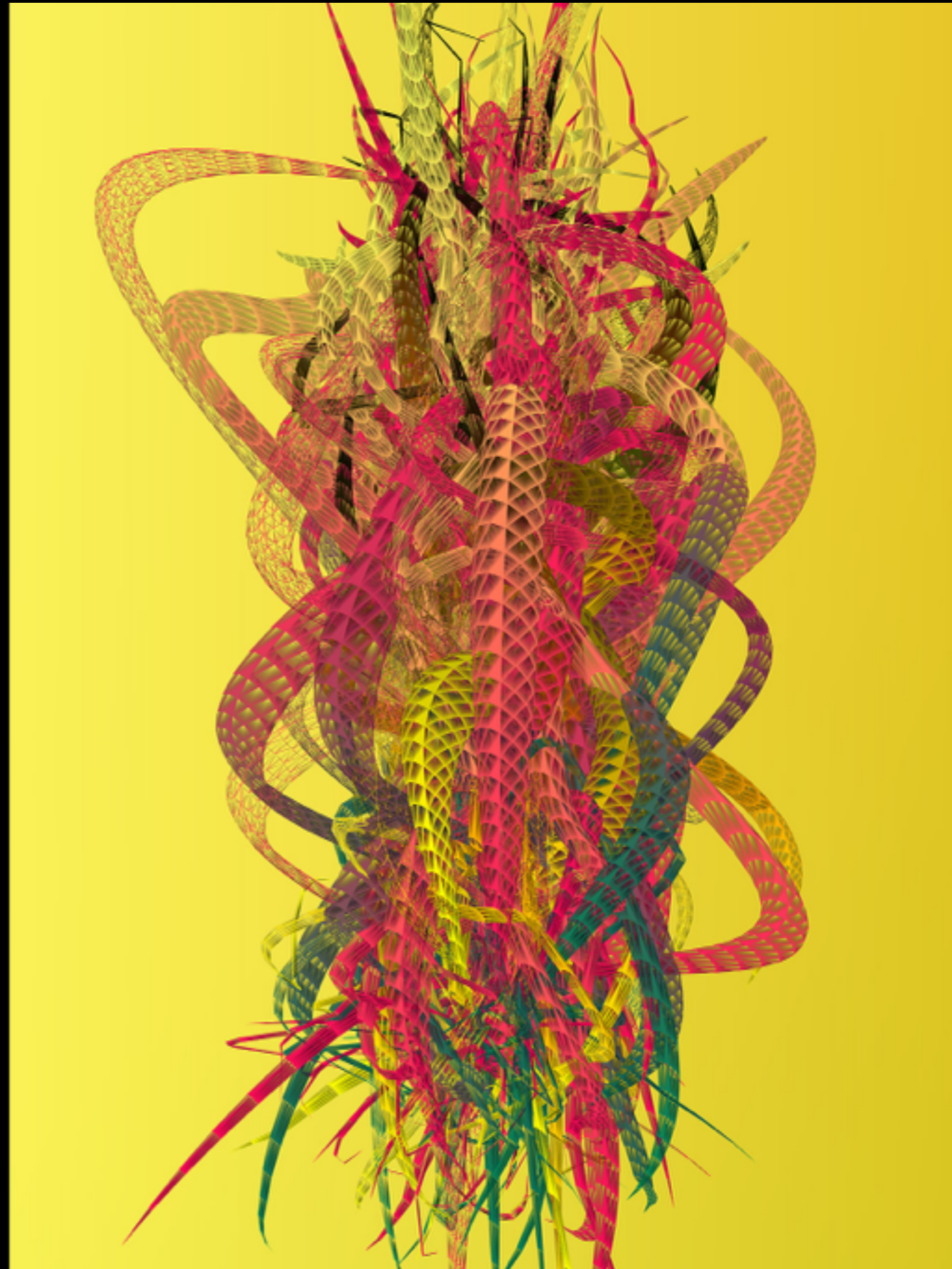
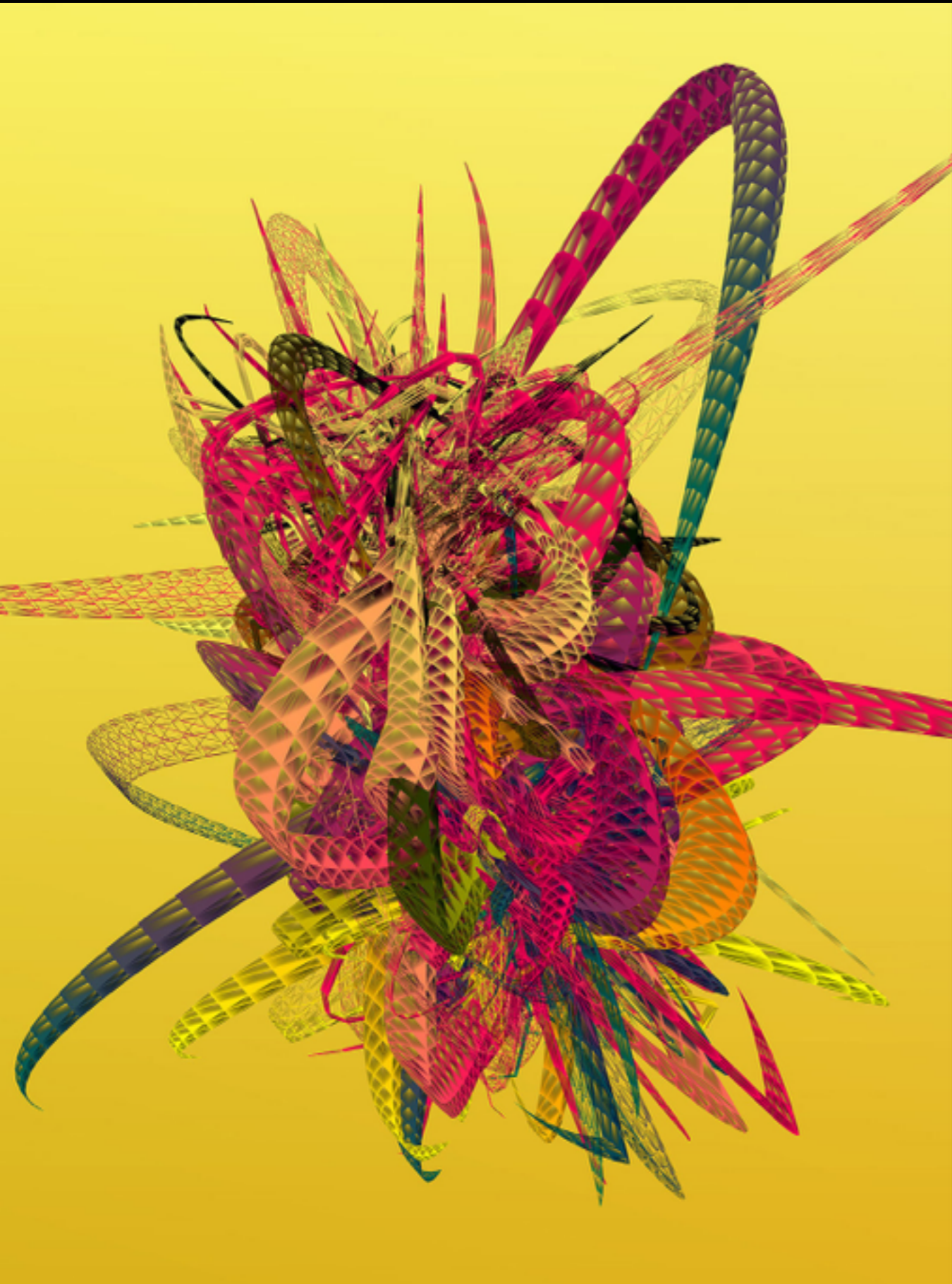


# Combined strategies will keep it interesting

— Making it work for multiple songs

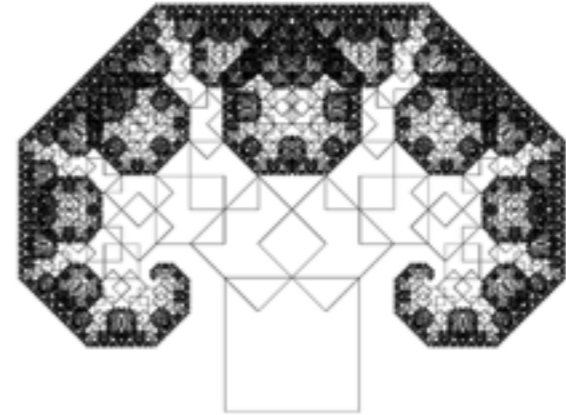
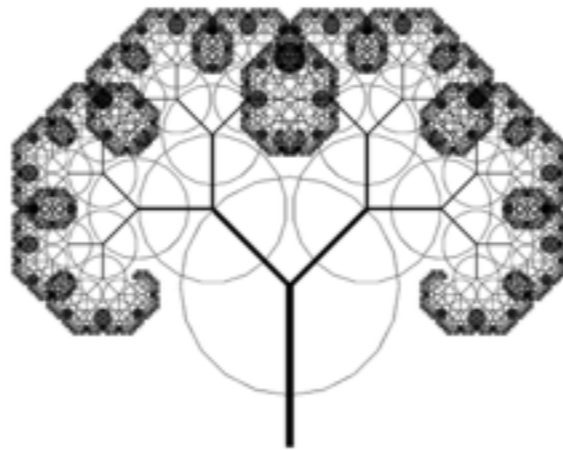
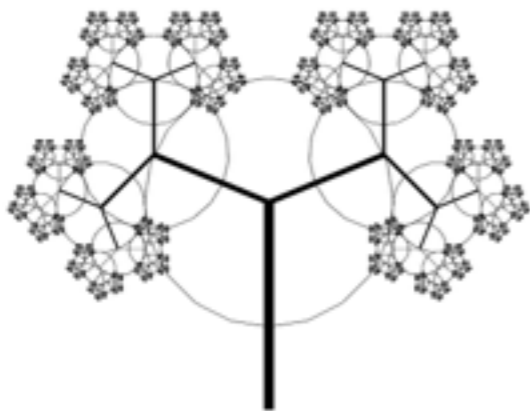
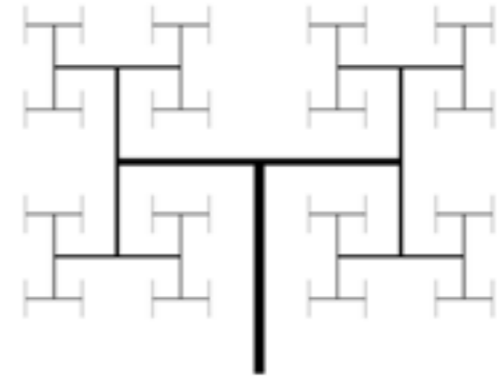
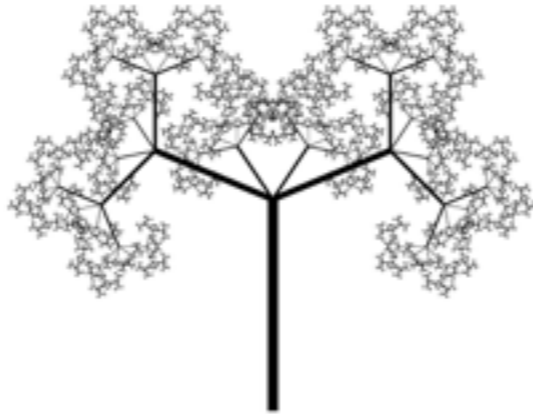
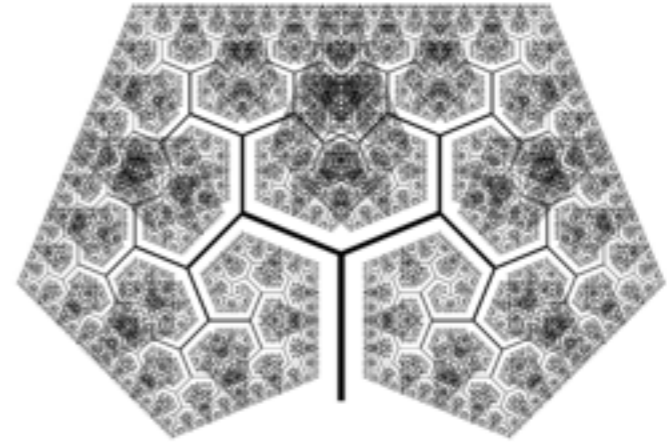
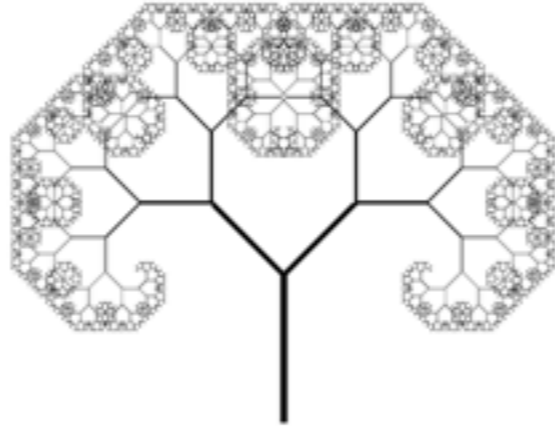
# Some math

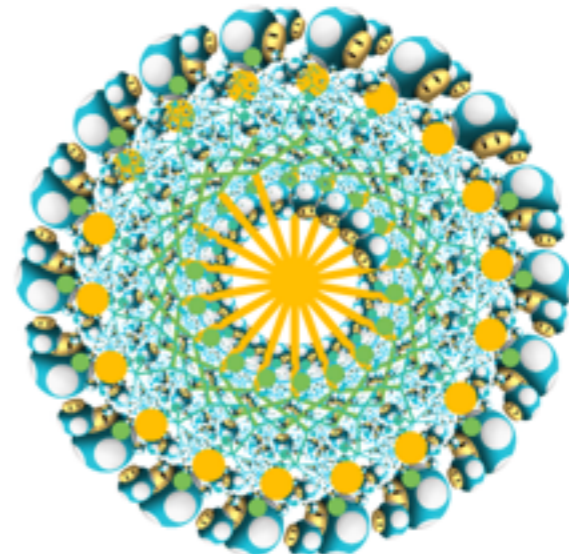
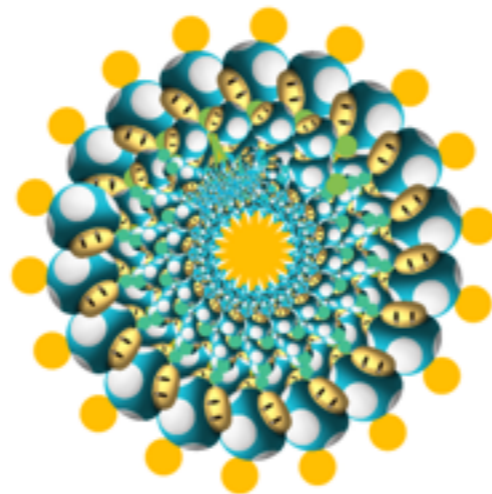
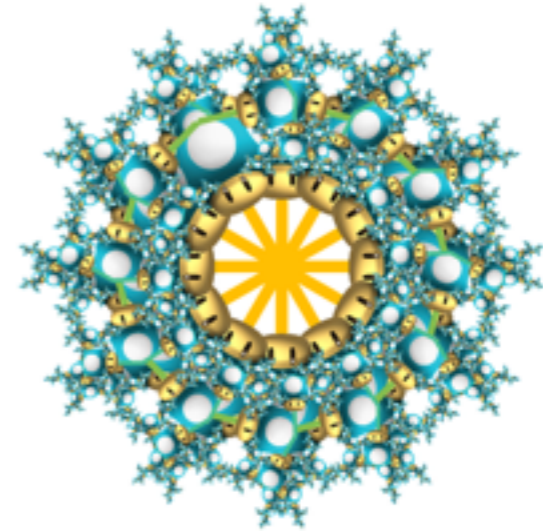
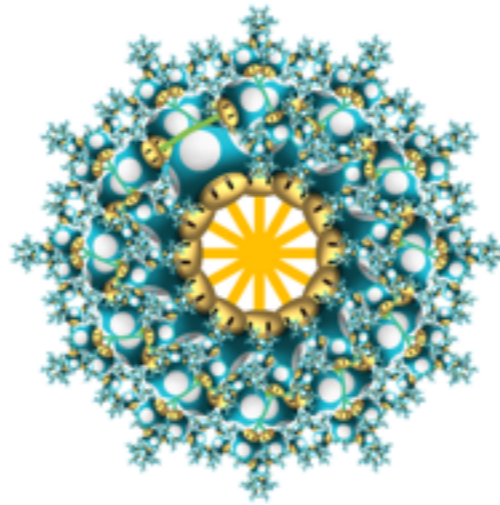
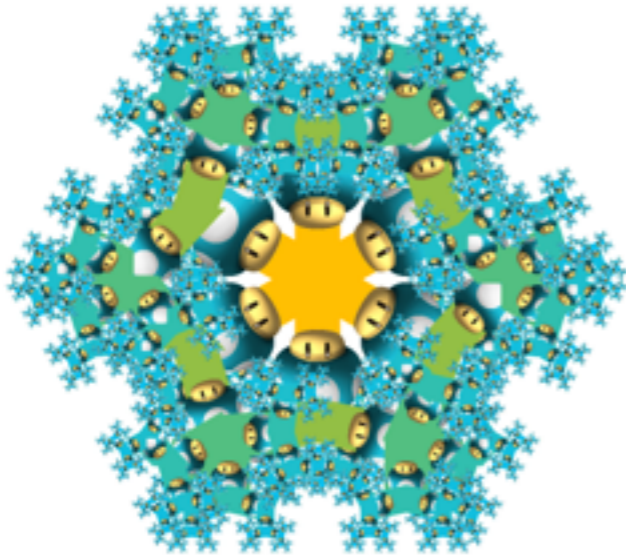
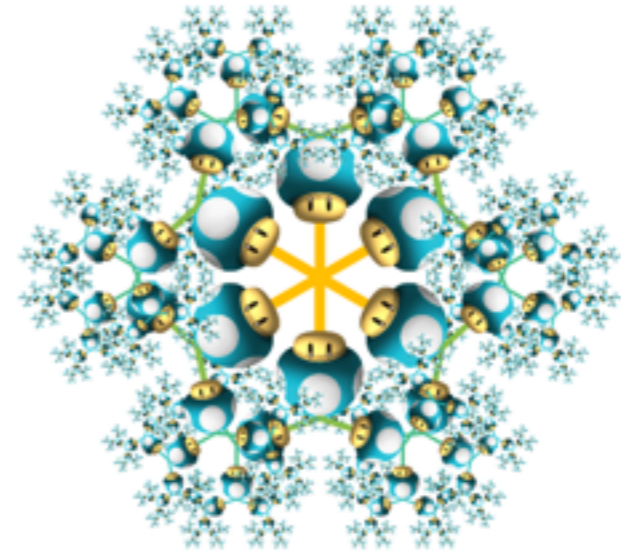
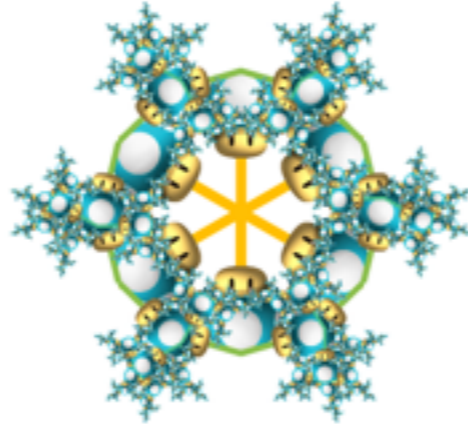
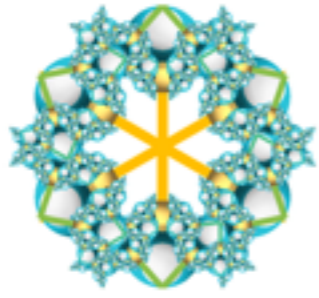
Ah yes, the almighty algorithm



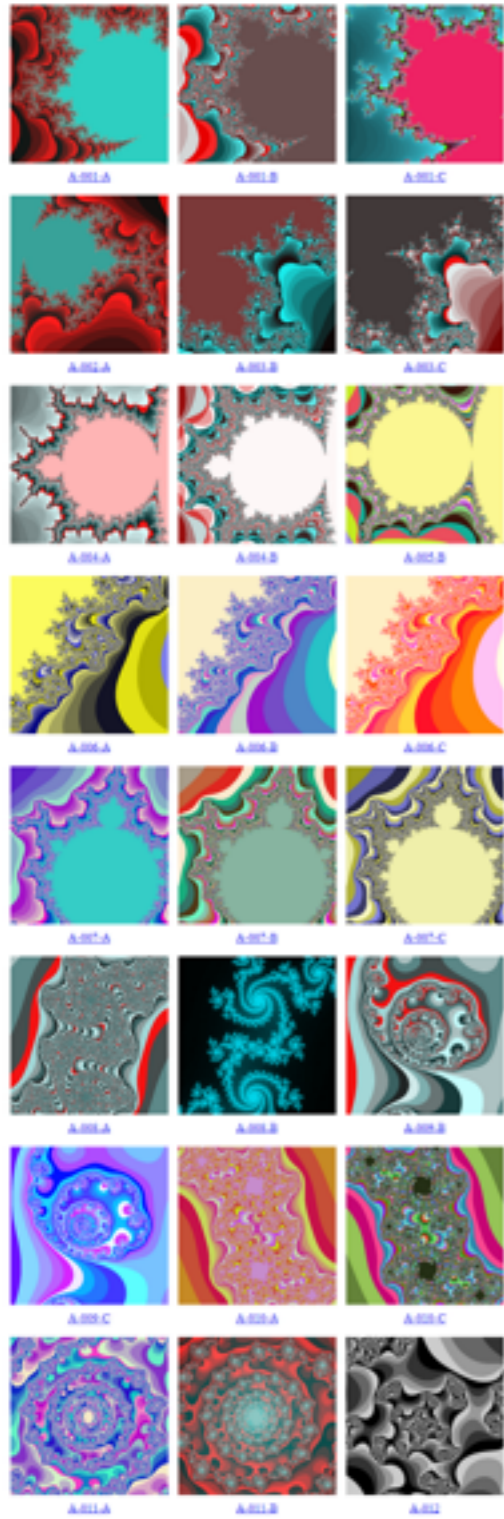
<https://vimeo.com/17693219>







Mandelbrot & Julia set



Recursive Tree



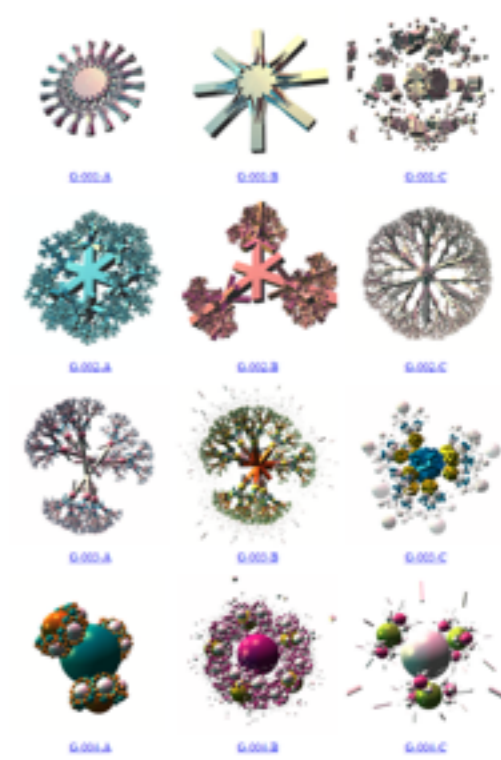
Eye Bee Em

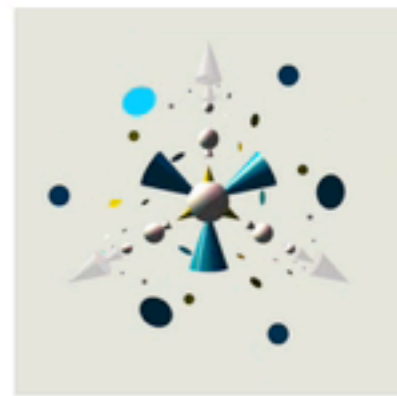
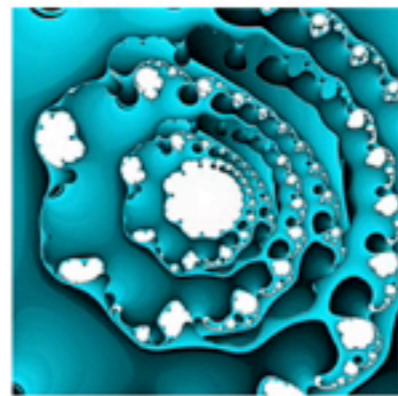
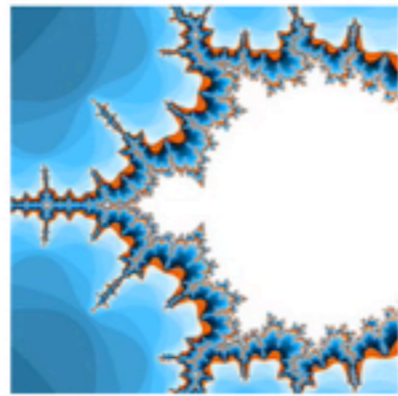
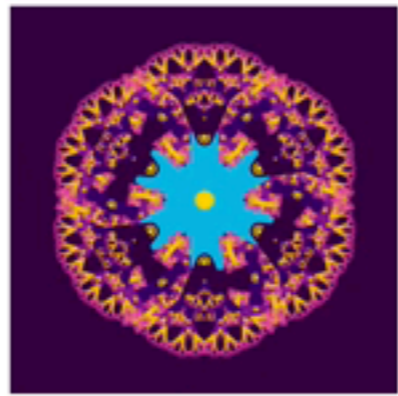
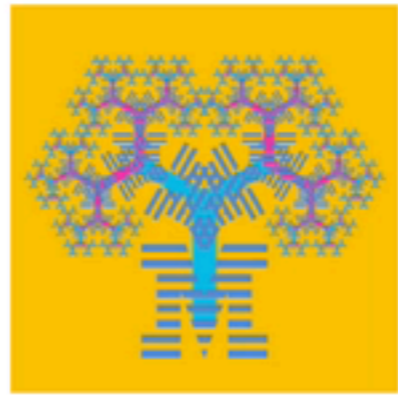
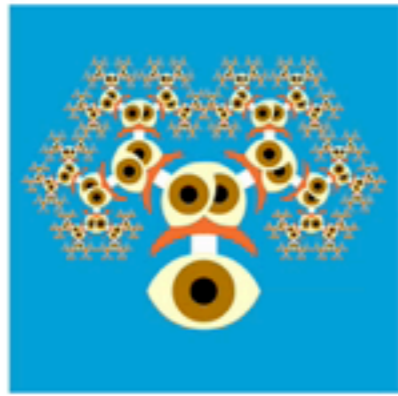
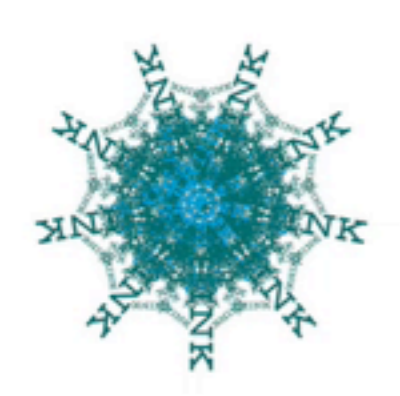
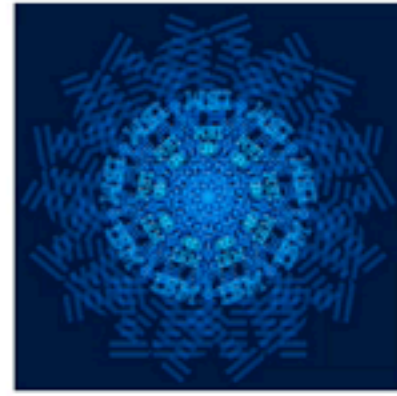
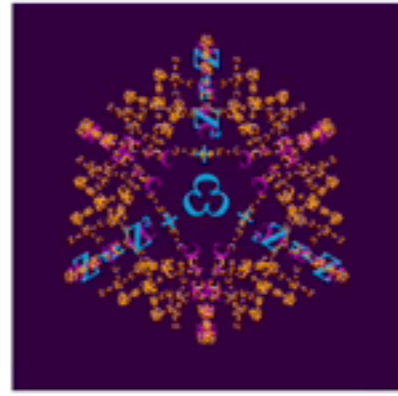
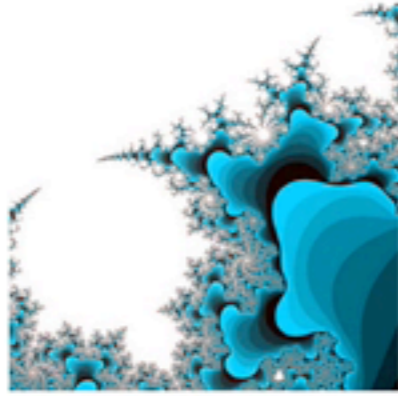


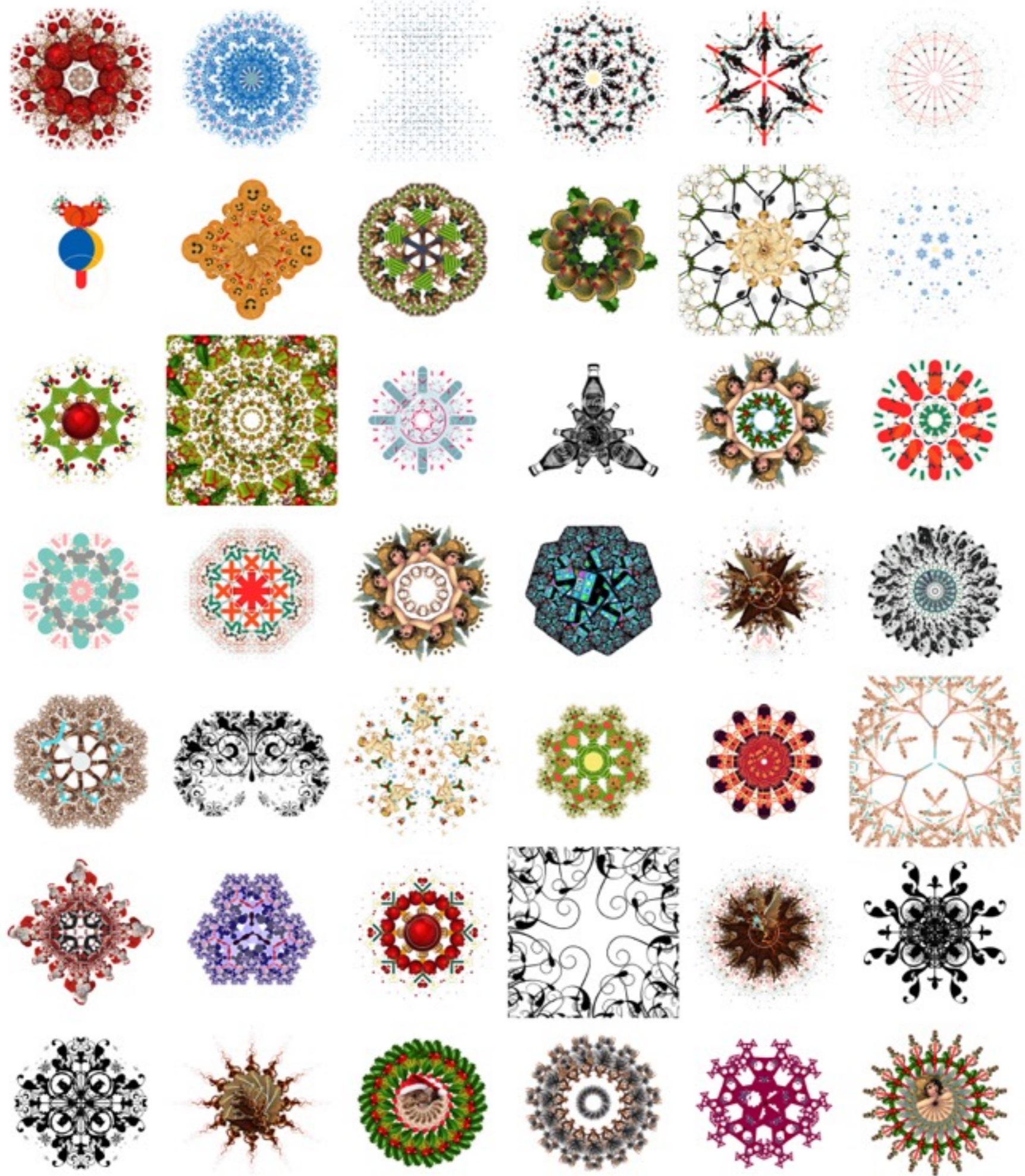
Recursive Patterns



Recursive Tree Dee







The sky is not the limit,  
lot's of happy accidents

— Advanced knowledge of maths

# Thank you!

@gwenvanhee  
[github.com/gwenvanhee](https://github.com/gwenvanhee)



[www.littlemissrobot.com](http://www.littlemissrobot.com)