

DATT 2040

Math Code Art

DATT 2040, content breakdown

Week 1: Grids and simple rules

Week 2: Emergence, vectors and motion

Week 3: Waves, circles and distance

Week 4: Objects, interaction and physics

Week 5: Feedback and reaction diffusion

Week 6: Fractals, recursion and attractors

Week 7: Generative music machines

Week 8: Image processing and shaders

Week 10: 3d space, world building and orientation

Week 11: Final project development

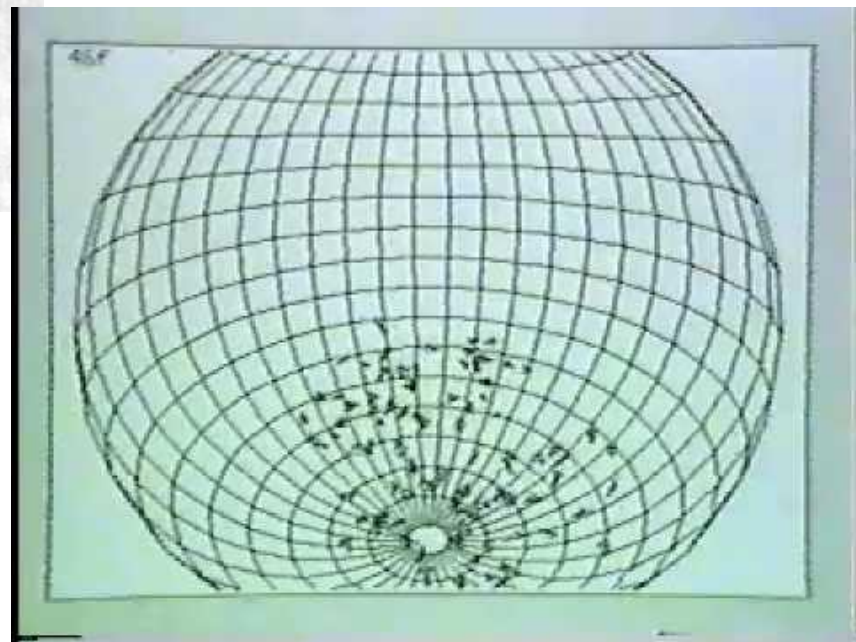
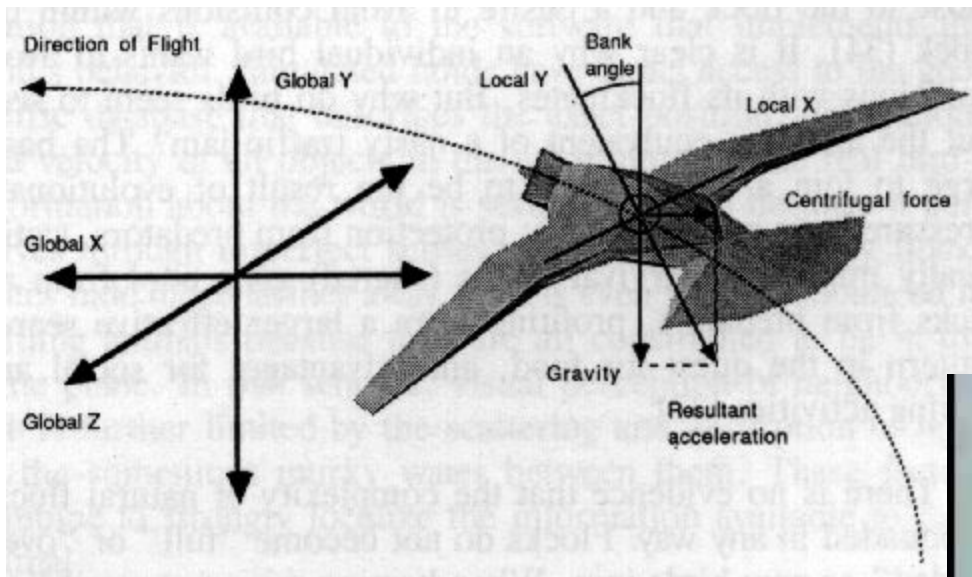
Week 12: Final project development

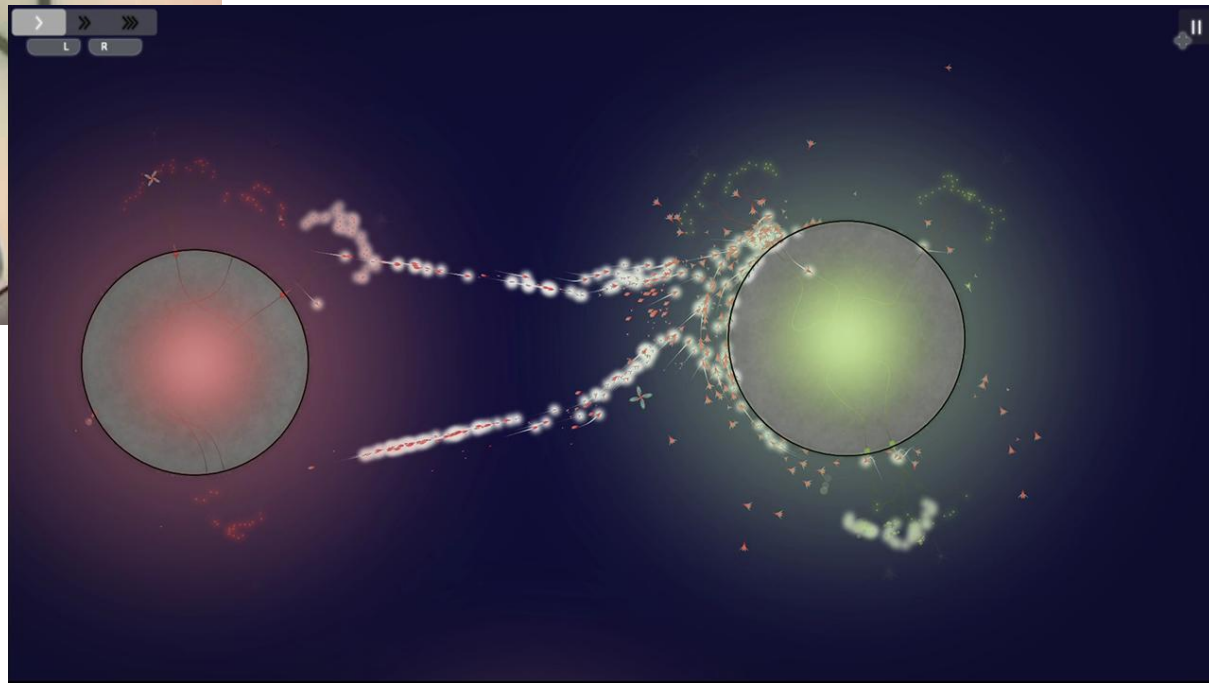
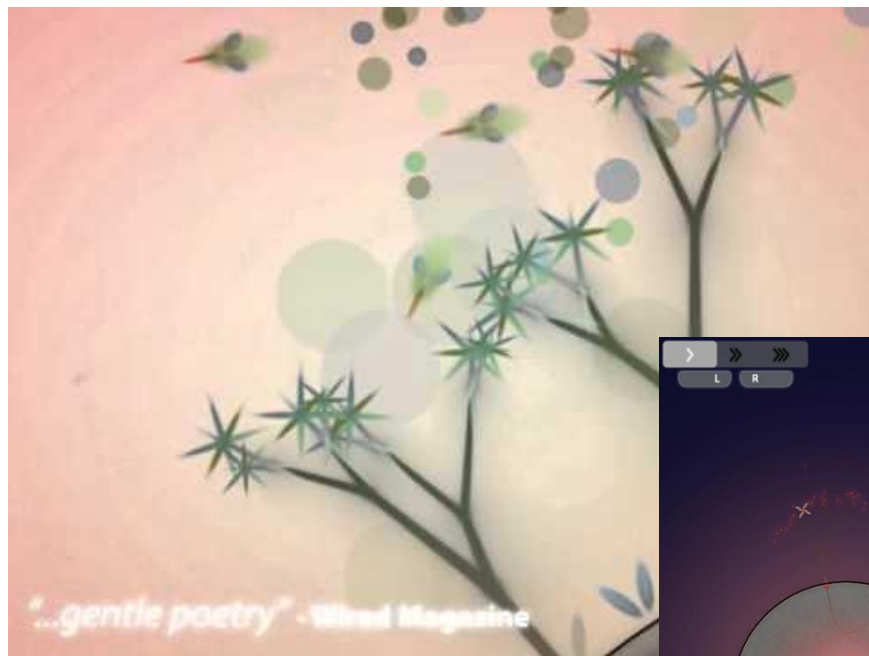
Week 2

Emergence

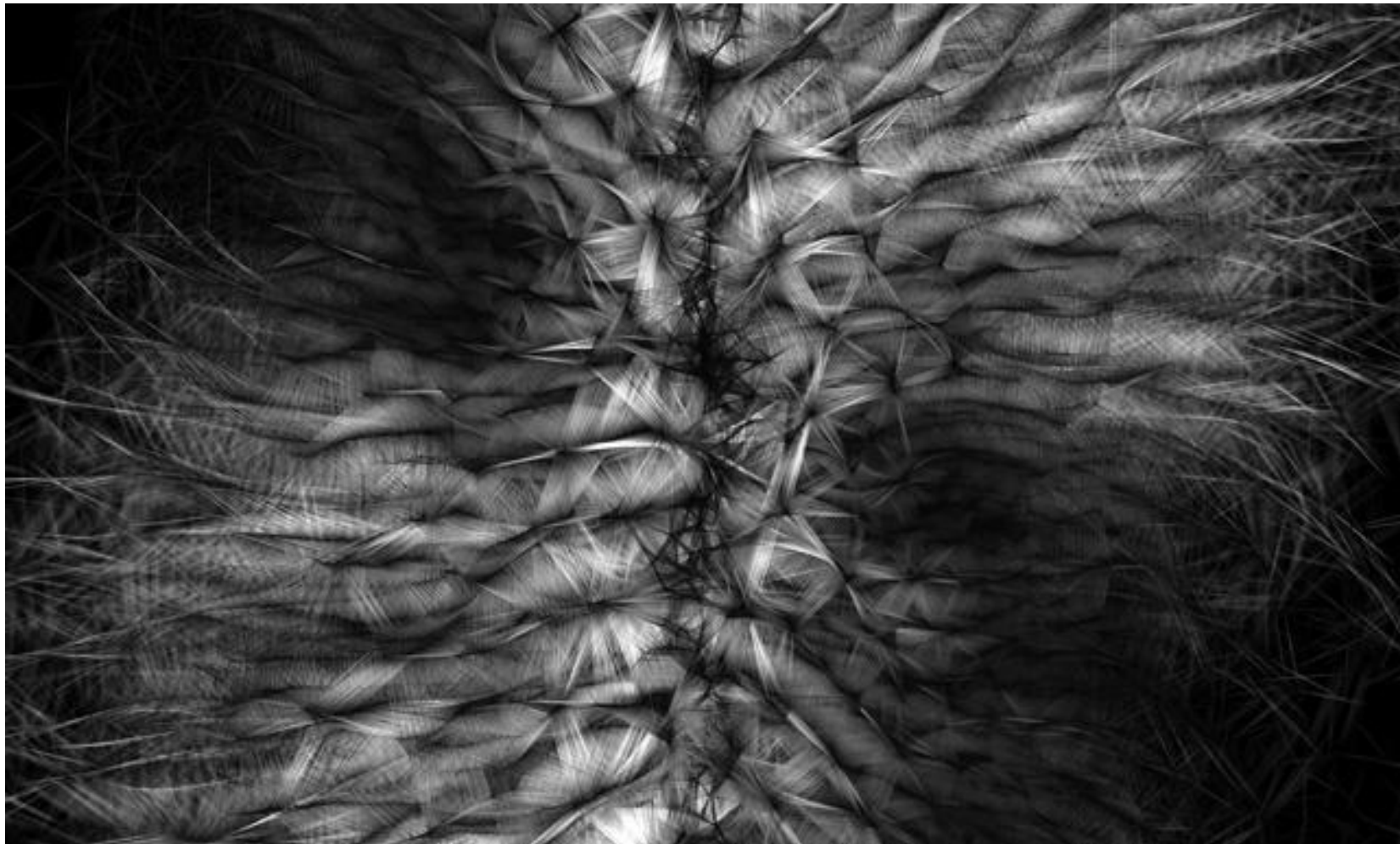
emergence occurs when an entity is observed to have properties its parts do not have on their own, properties or behaviors that emerge only when the parts interact in a wider whole.

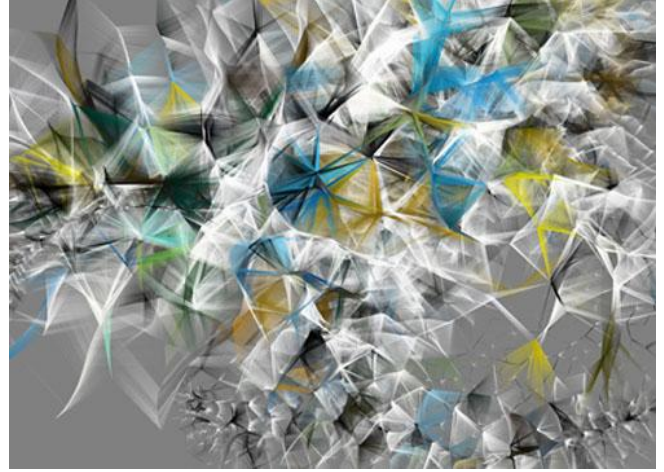
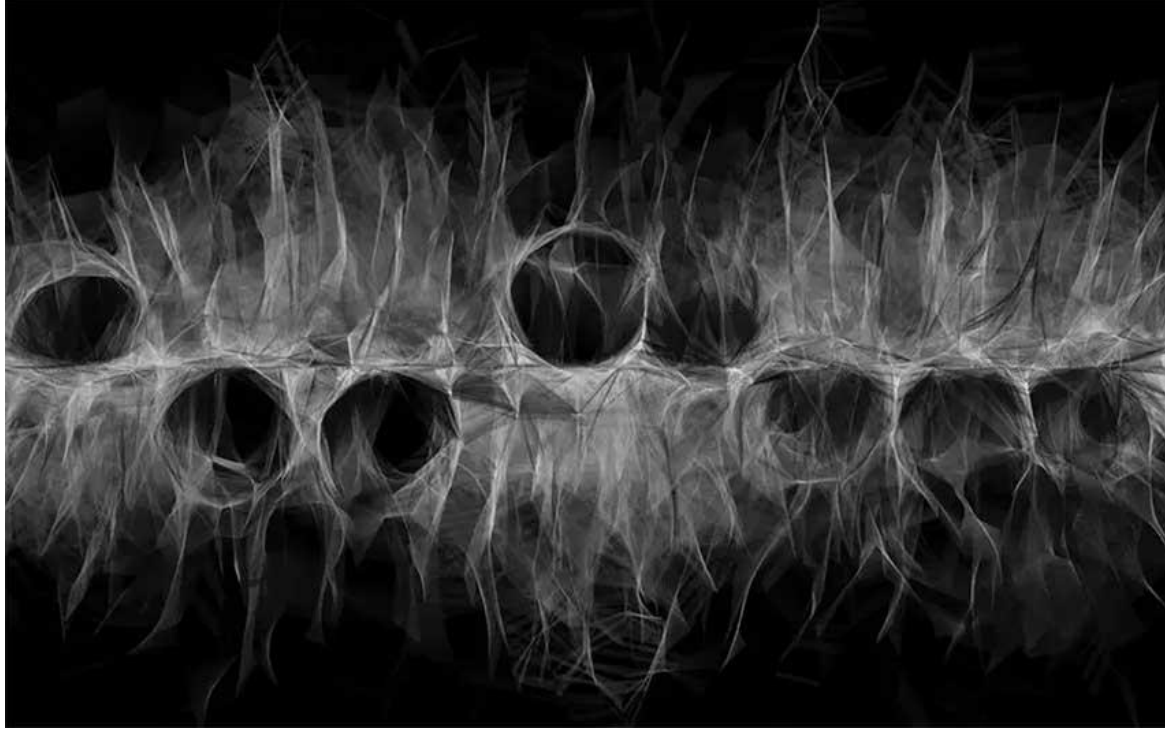






Move in a straight line

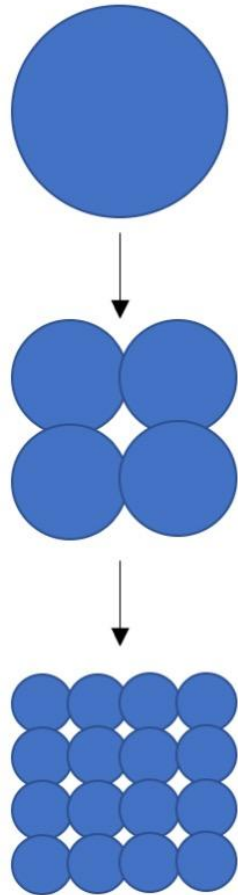




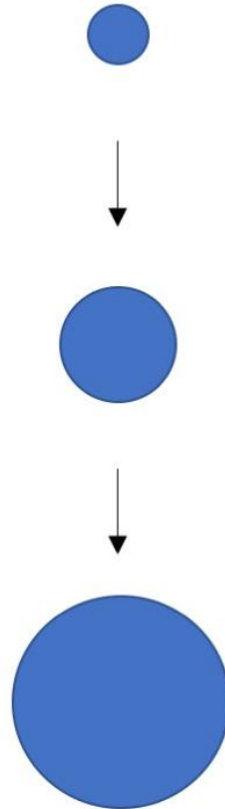


the
**creators
project**

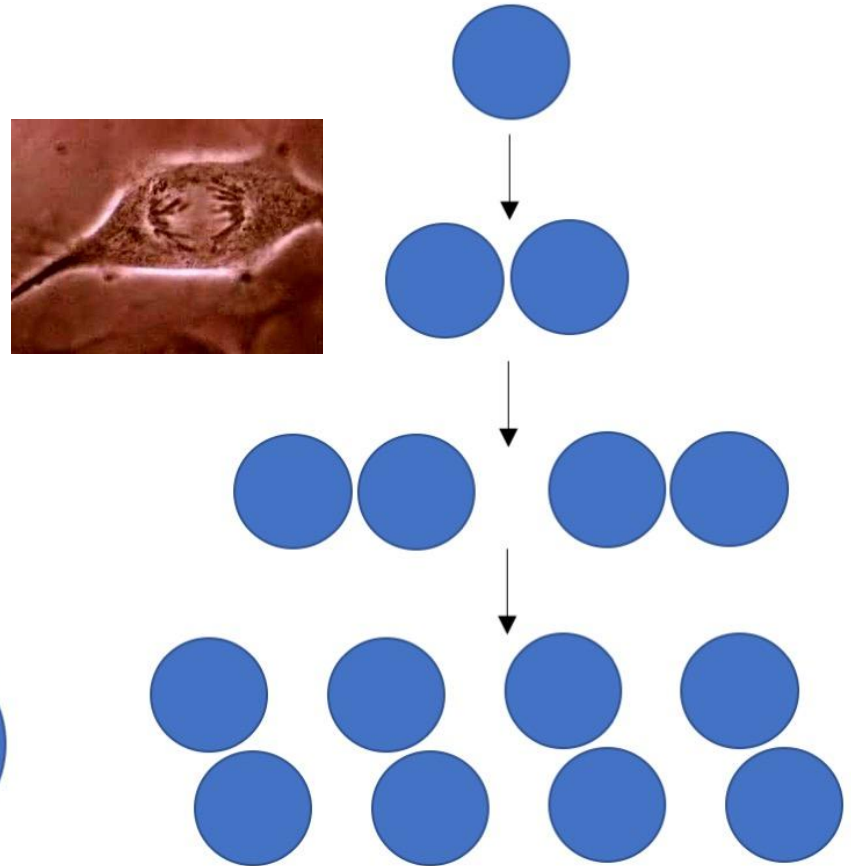
Cell division



Cell growth

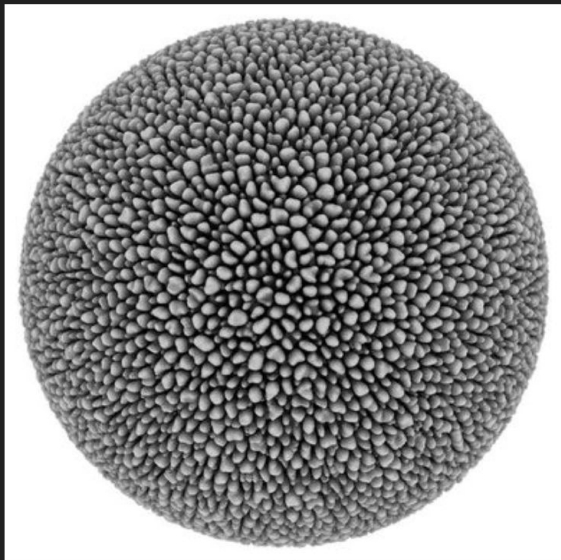


**Cell growth & division
(Cell proliferation)**



Andy Lomas

Morphogenetic Creations



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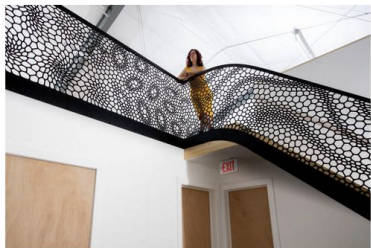
[Contact](#)



HAPPY.PLACE

processing march, 2004 j.tarbell





Corollaria

2020



Grimes Bodysuit with Asher Levine

2022



Porifera

2018



data-driven midsoles with New Balance

2015



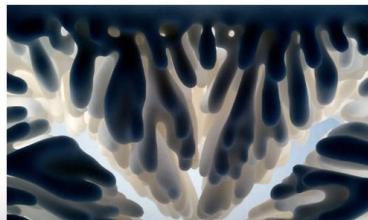
Cellular Structures

2007

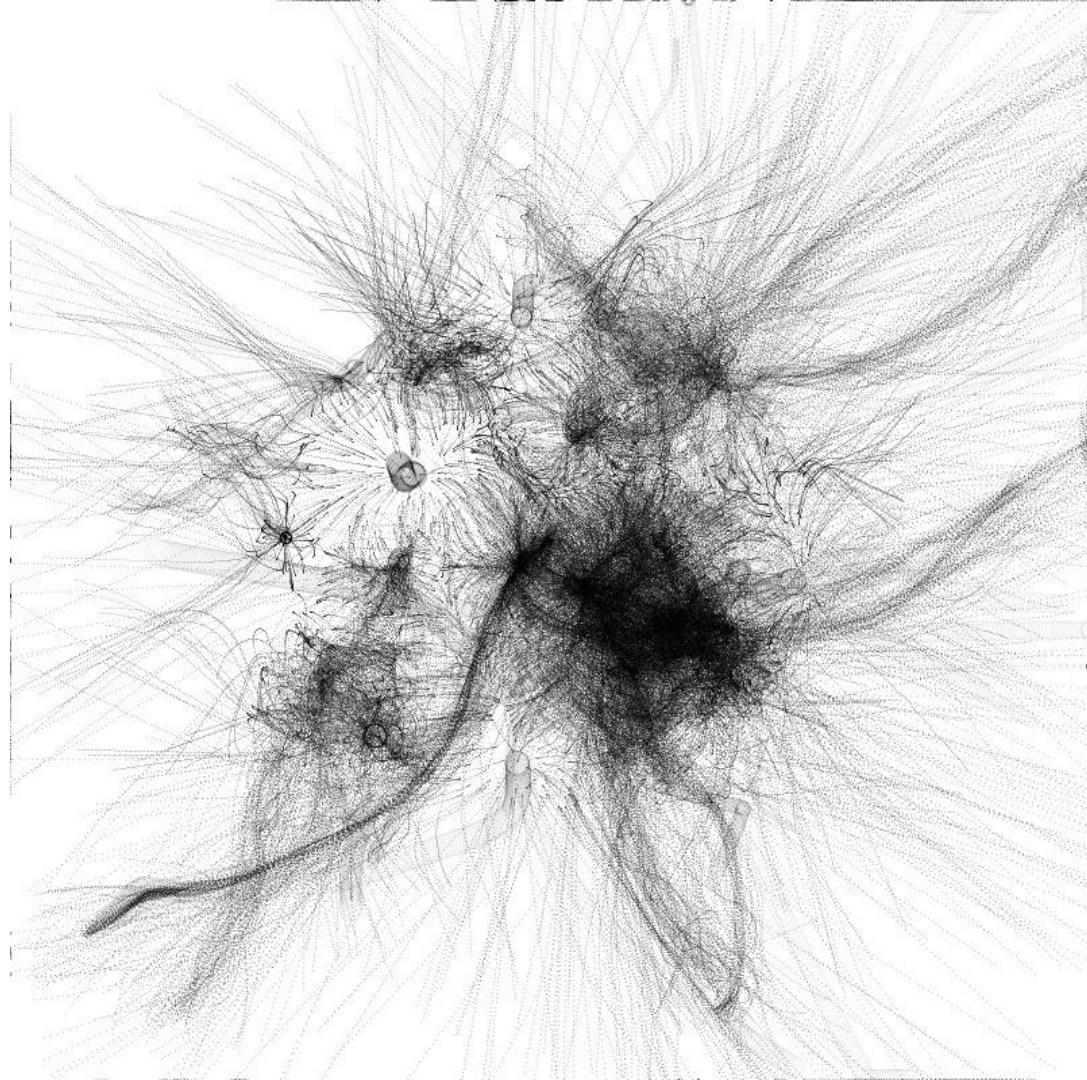


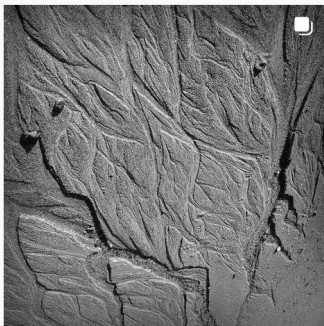
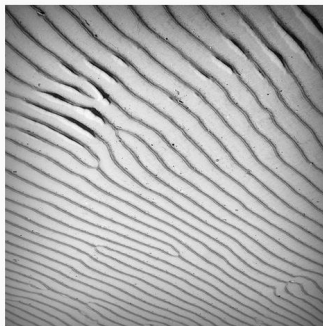
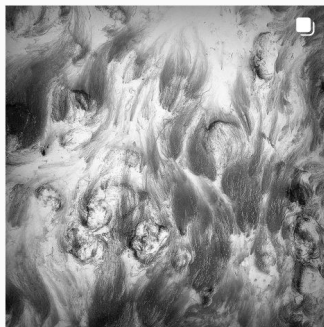
Generative Jigsaw Puzzles

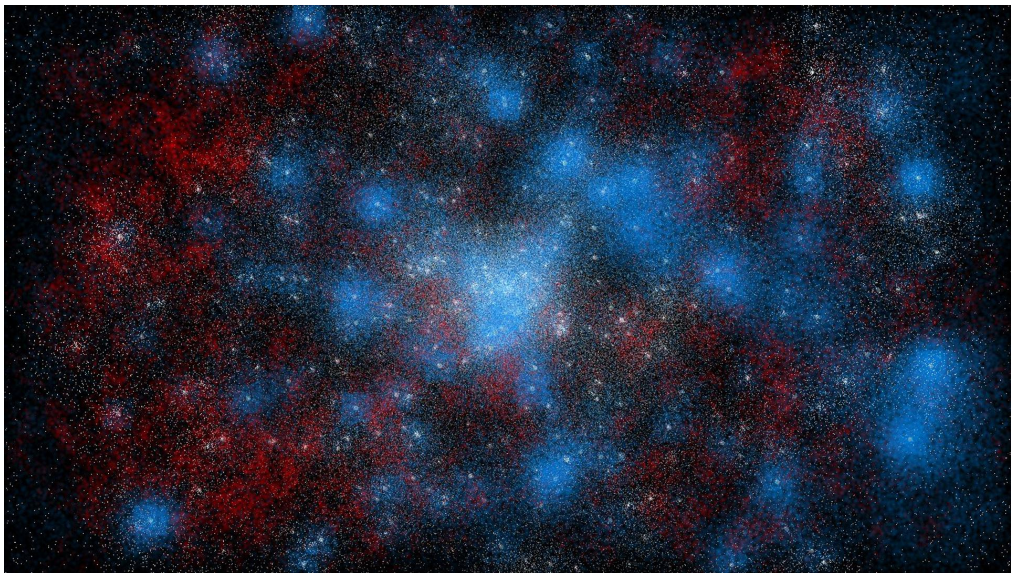
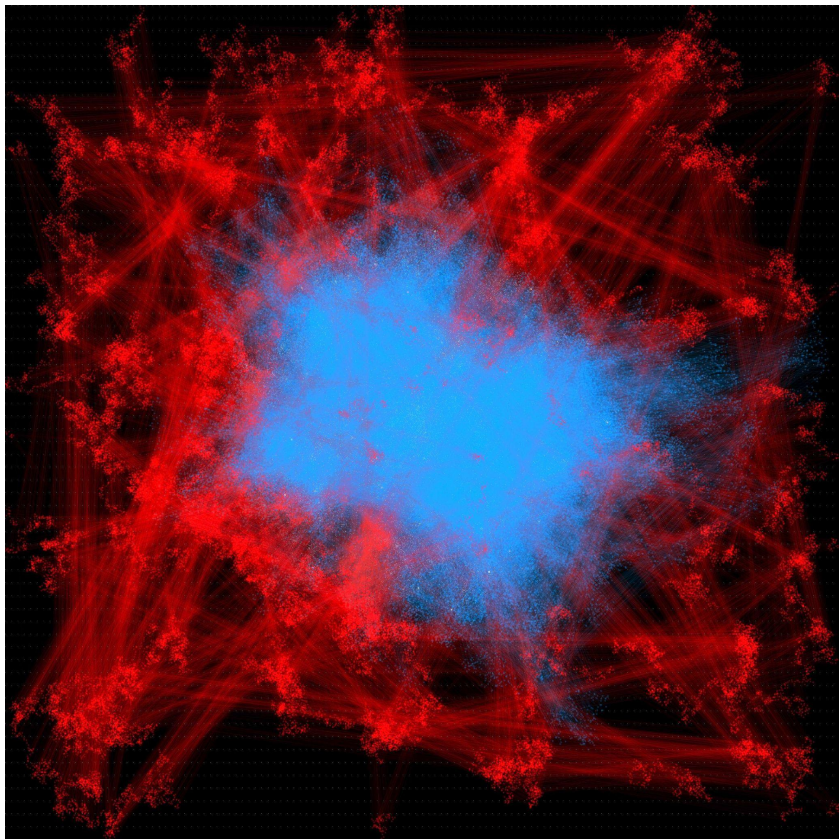
2012











Emergence

In our next lab we will be thinking about motion, vectors, and emergent systems. Think about

- An emergent property that you notice in your day to day life. Some examples [here](#)
- What is the simplest emergent form you can think of?
- A lot of the examples we have seen of emergence are maximal (lots of components) can we have minimalistic emergent systems? What might these look like, what's the most minimal emergence we can imagine.

To lab bring.

- Yourself
- Laptop

Before next lab:

Watch this short minute video on [modulo](#) – we'll be having our first take home quiz on Friday (you will have 1 week to complete). There will be questions on week 1 lecture material, modulo and grids.

Aside from that modulo is a super useful and effective tool in our creative coding toolbox!