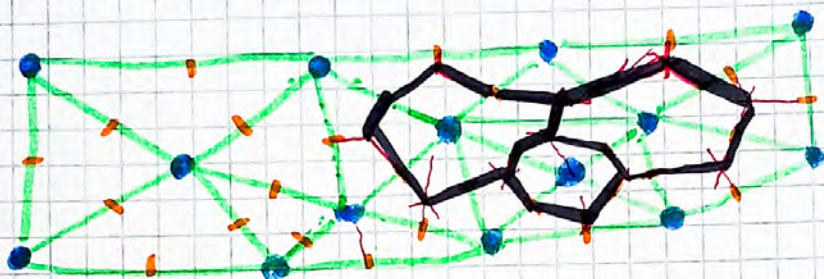


Warm up: Voronoi Diagrams.

1. make random spots



2. connect nearest neighbour

3. split lines in two

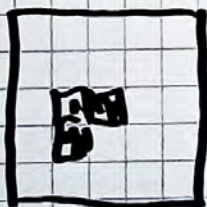
4. project perpendicular lines

5. connect intersections along lines

Langton's Ant Automaton



$$\text{Ant} = \sum_{\substack{N \\ E \\ S \\ W}} \{ \uparrow, \rightarrow, \downarrow, \leftarrow \}$$



state A	head state A	→
state B	head state B	pos
B	↑	
W	←	1 left

Brain storm!

- environment
- file sets
- rules.



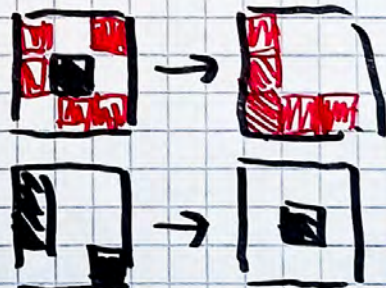
chaos vs. randomness. vs. stability



→ Ant is stable + deterministic



random
pap

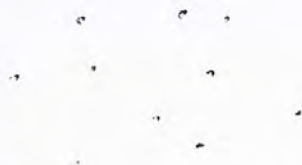


find self-perpetuating patterns.

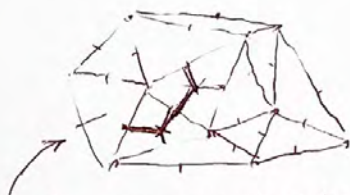
Emergence 02

Voronoi diagram:

1. Place dots on a page.



2. connect nearest neighbors.



3. Divide each line in half.

4. construct perpendicular bisectors.

5. connect intersections along bisectors.

Reminder: Langton's Ant

$\boxed{\uparrow}$

Ant = $\sum \uparrow, \rightarrow, \downarrow, \leftarrow$

Square = $\sum B, W$

Rule: $B \uparrow W \rightarrow A \downarrow$

write zigzag purely out of state transitions is hard!

★ Try it.

Need: memory in "agent"
and in environment.

→ needs a very specific config
to achieve any goal.

→ look at computation as a very
fragile chaotic state machine.

eg. can you make Ants
Ant draw arbitrary shapes?

In C12 version, no. main req.
for this? → Ex at time.

What is an agent tho? what
the speaker said "movement" way
needed for something to be alive.

→ Is the Ant alive? or the system?

conway's game of life illustrates.
a great version of this. if every
cell can transition w/o a head,
that's interesting?

conway spent months trying
these rules:

☆ cmway demo.

(write down mbs)

→ find some rep. systems.

↳ important concepts here are

→ stability

→ chaos

→ randomness.

Stability:

take 100 pictures
of each —
change?



↑ unstable



stable

Can this system be
perturbed? sure! it's just
harder.

usually humans perceive agency
when something has unpredictable but
not totally random "movement"

is agency = intelligence?

→ stable configs / "like forms"

→ stable perms.

↔ stable environments.

→ infinite / finite?

★ if true: intent an extension
to Conway.

Burns form: envs.
tile sets
rules.