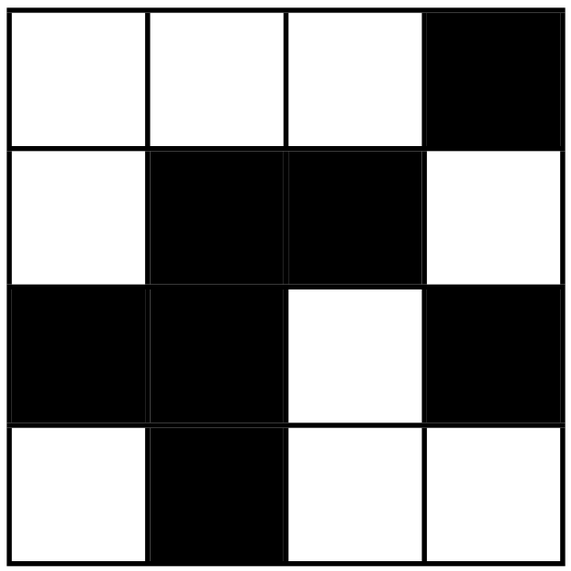
[QI;MP]

Conway's Game of Life

Jérémie Gillet

OIST

Conway's Game of Life



- A live cell with less than 2 live neighbours dies (under-population)
- A live cell with more than 3 live neighbours dies (over-population)
- A live cell with 2 or 3 live neighbours survives
- A dead cell with 3 live neighbours comes to life

Conway's Game of Life

[QI;MP]

- Very simple rules
- Complicated structures emerge
- In biology: model for populations
- In physics: model for interactions
- In computer science: study of complexity
- Self-replication, Turing machines...
- Delightfully hypnotic

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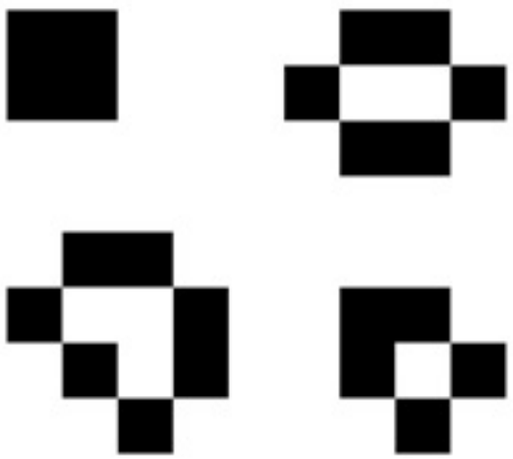
Stable



Blinkers

Glider

Spaceship

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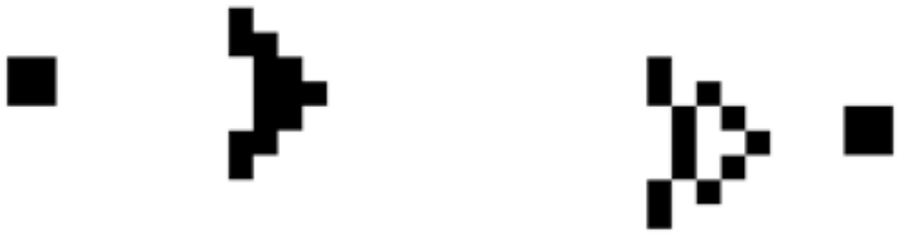
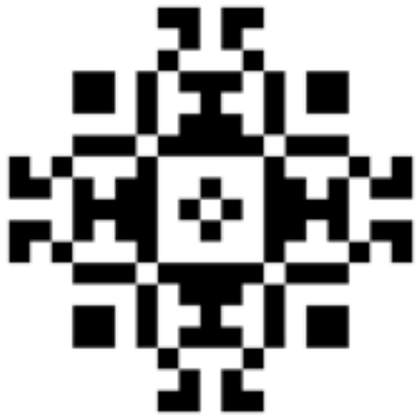
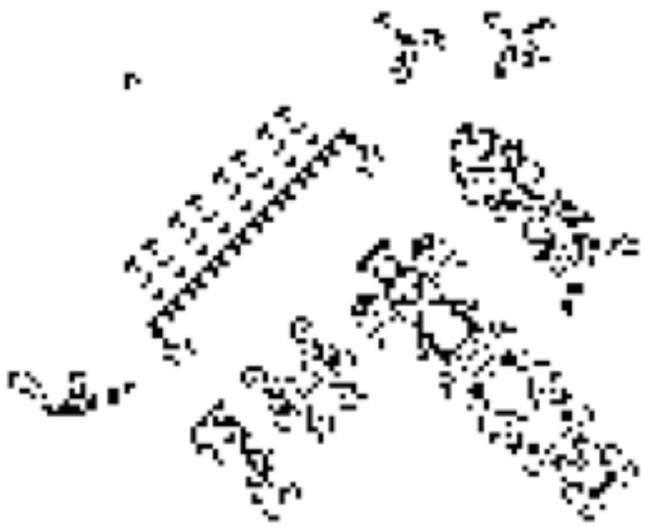
Gosper glider gun



Oscillators



Bigger ships



Screen fillers

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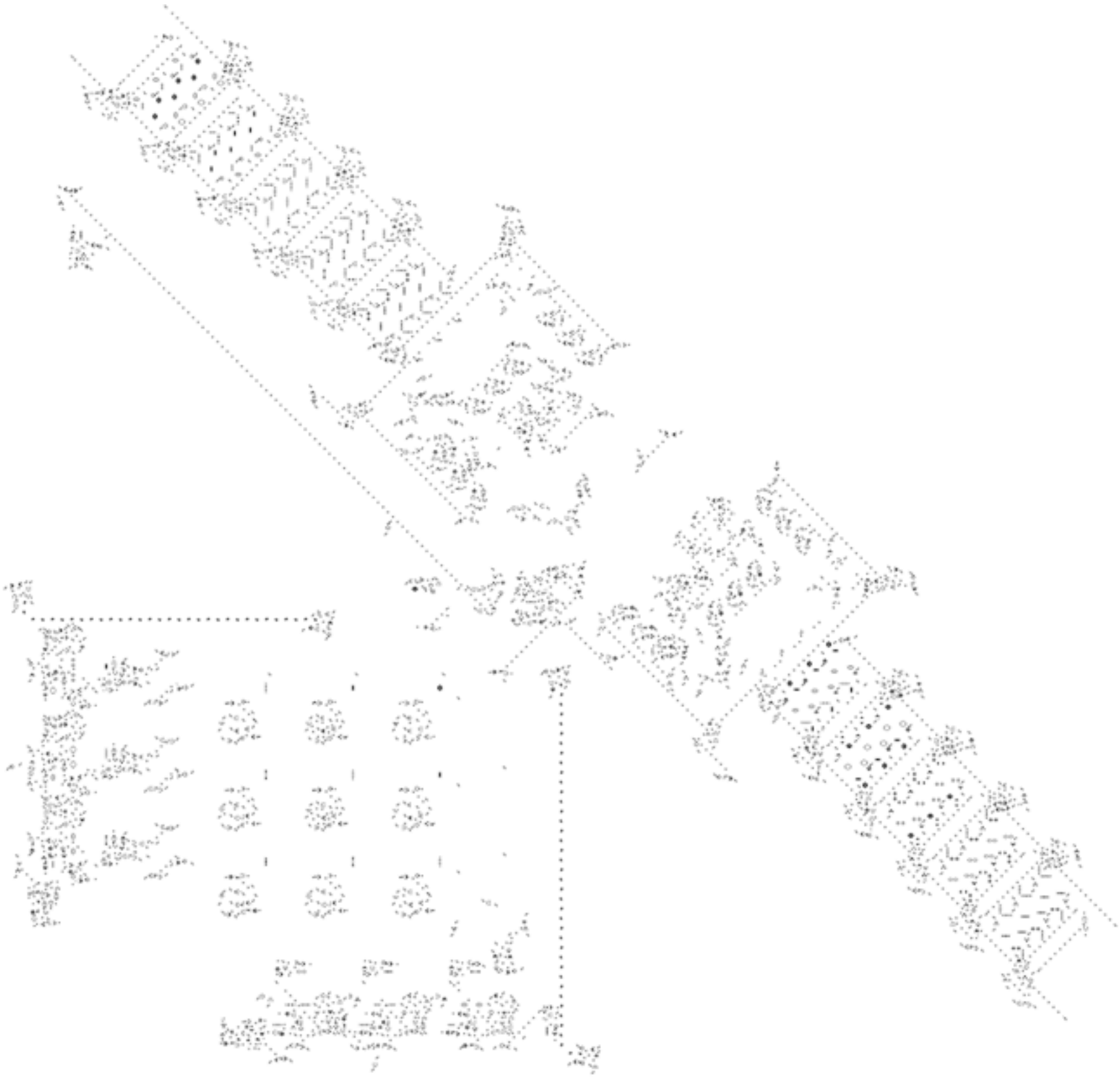

Conway's Game of Life

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- Implement a version of the Game of Life
- 0 is dead, 1 is alive
- Use toroidal boundary conditions
- A function `cycle(A)` will calculate the population after one cycle
- Start with random initial conditions, and plot the evolution of the system
- Implement a way to chose the initial conditions by clicking on a figure (`ginput`)