Instituto Politécnico Nacional

Escuela Superior de Cómputo

Artificial Life Robotics Laboratory

(ALIROB)

3D Cellular Automata And Pentominos

Simulations and configurations

Laura Natalia Borbolla Palacios

Winter 2018

Contents

1 Brief summary

1.1 Pentominos

Hey, there! We are talking about pentominos. Basic structures and how Conway used them to find basic configurations in the elemental automata.

1.2 Cellular Automata

Hey, there! We are talking about cellular automata. Basic structures and some well acquainted rules.

1.3 Well known configurations

Hey, there! We are talking about pentominos. Basic structures and how Conway used them to find basic configurations in the elemental automata.

1.3.1 Still Life

1.3.2 Oscillator

1.3.3 Glider

1.3.4 Glider Gun

REMARK WHY ARE THEY SO IMPORTANT AND THAT WE ARE LOOKING FOR ONE.

2 Experiment Results

2.1 The Settings

Talk about the settings for the simulation, the simulator used and the constrains (equipment, time, etcetera).

2.2 Pentomino By Pentomino

Here we talk about how the results will be exposed, for each pentomino it was done a simulation with the pentomino pasted with it-self? Remark that the pentominos are ordered in alphabeticall order and only the intial and final configurations will be shown, ergo, the appendix contains the complete evolution of each pentomino.

2.2.1 Pentomino O

2.2.2 Pentomino P

2.2.3 Pentomino Q

2.2.4 Pentomino R

2.2.5 Pentomino S

2.2.6 Pentomino T

2.2.7 Pentomino U

2.2.8 Pentomino V

2.2.9 Pentomino W

2.2.10 Pentomino X

2.2.11 Pentomino Y

2.2.12 Pentomino Z

2.3 Configurations found

Here we talk about the configurations found.

3 Conclusion

Talk about the configurations found (yayy), why it is important to find a glider gun (then, they would have ”cómputo universal”).

Appendices

A Full Pentomino Evolution

Below are the full evolutions of each pentomino.

A.1 Pentomino P

A.2 Pentomino Q

A.3 Pentomino R

A.4 Pentomino S

A.5 Pentomino T

A.6 Pentomino U

A.7 Pentomino V

A.8 Pentomino W

A.9 Pentomino X

A.10 Pentomino Y

A.11 Pentomino Z

References

[1] (). Wave pcm soundfile format, [Online]. Available: http://soundfile.sapp.org/doc/WaveFormat/.