An Investigation of Neutral Networks in 1-Dimensional Cellular Automata

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Abstract—The abstract goes here.

1. Introduction

REMOVE LATER an Introduction that introduces important terms, concepts and definitions

A cellular automaton is a multi-dimensional array of cells where each cell can be in one of a finite number of states at time t. The state of a cell c at time $t + 1$ is determined by some function of the the state of the cell c and the state of the cells in some neighborhood of c at time t.

In this paper, we restrict ourselves to the study of one-dimensional binary cellular automata. A *one-dimensional cellular automaton* consists of a list of cells where each cell's state will either be *on* (black) or *off* (white). The state of each of its cells at time $t + 1$ will be determined by a function called the *transition function* whose input is the state of the cell itself and the states of the r neighbors on each side of the cell and whose output is the new state for cell. All cells update simultaneously. Note that list wraps, so the left neighbors of cell 0 will be cells $n - 1$, $n - 2$, etc.
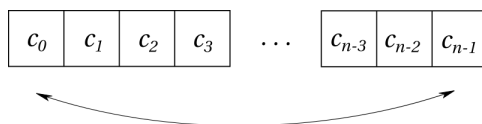

Figure 1. Cells c_0 and c_{n-1} are neighbors.

2. Methods and Results

Figures with captions, Methods text explaining how you generated each figure and any associated calculations, Results text associated with each figure that explains and interprets that figure

3. Conclusion

The conclusion goes here.

References

[1] H. Kopka and P. W. Daly, *A Guide to LaTeX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

[2] M. Mitchell, *Complexity: A Guided Tour*. Oxford, England: Oxford University Press, 2009.

[3] A. Wagner, *"The role of robustness in phenotypic adaptation and innovation"*, In Proc. of the Royal Society B, 2012, pp. 1249-1258.