Abstract

Creating algorithmic approach for generating self-replicate patterns of digital images is important and difficult task. Researchers face with many challenges in developing tiling algorithms such as providing simple and applicable algorithm to describe complex patterns. This paper used cellular automata with extended moor neighborhood to generate self replicate patterns of digital images. Growth from simple motif in two dimensional cellular automata can produce self replicate patterns with complicated boundaries, characterized by a variety of growth dimensions. The proposed approach leads to accurate and scalable algorithm for generating patterns. The results of implemented algorithm demonstrate our approach with a variety of patterns.

References

A Novel Method for Generating Self Replicate Patterns Based on two Dimensional Cellular Automata, Twenty Five Neighborhood Model

167-173.

- Minooofam, S. A. H., and Bastanfard, A. 2012. A Novel Algorithm for Generating Muhammad Patterns Based on Cellular Automata. In proceedings of the 13th WSEAS international conference on applied mathematics (math&quot;).
13.

**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Cellular Automata  
Pattern Generation  
Linear Rules