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

International Journal of Computer Applications
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Volume 47 - Number 2
Year of Publication: 2012

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10.5120/7163-9450

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

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Index Terms

Computer Science
Pattern Recognition

Keywords

Cellular Automata  Pattern Generation  Linear Rules