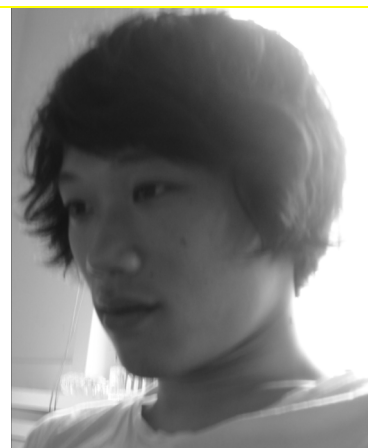


Yota Morimoto

Poster: Exploring the Rule Space of Cellular Automaton in Sound Synthesis



Abstract:

The paper describes a novel approach to digital sound synthesis based on cellular automata (CA). One of the simplest CA system is chosen to investigate how the complexity of the system can be exploit in an audio-domain.

An overview of the implementation using the SuperCollider software (a computer music programming language with a plug-in C++ framework) is illustrated, followed by discussions of the musical and compositional considerations involved in the approach [1][2]. Thirdly, some of the CA rules that are capable of generating interesting sonic dynamics are examined [3]. Timbral variations of self-modifying waveforms obtainable by the system are demonstrated, and conclusions drawn.

Topic: Music

Author:

Yota Morimoto

University of
Birmingham, Department
of Music, UK
Institute of Sonology,
Royal Conservatory,
The Netherlands
<http://yota.tehis.net/>

References:

- [1] Yota Morimoto,
“*Hacking Cellular
Automata: An Approach
to Sound Synthesis*”, TU
Berlin, SuperCollider
Symposium, 2010
- [2] Agostino Di Scipio,
“*Micro-Time Sonic
Design and Timbre
Formation*”,
Contemporary Music
Reveiw, 1994
- [3] Stephan Wolfram, “*A
New Kind of Science*”,
Wolfram Media, 2002

Contact:

yotamorimoto@gmail.com

Keywords:

Cellular Automata, Music, Sound Synthesis



XIII Generative Art Conference
Live Performances