Eikosany: Microtonal Algorithmic Composition with R

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Algorithmic Composition

Overview of Methods (Nierhaus 2009)

- Markov Models / Stochastic
- Generative Grammars
- Transition Networks
- Chaos and Self-Similarity
- Genetic Algorithms
- Cellular Automata
- Artificial Neural Networks

My Main Focus

- Markov Models / Stochastic
  - Pioneered by Iannis Xenakis (Xenakis 1992)
  - (for example, Borasky 2021 - random walks on chord matrix)

Musical Scales

Types of scales

- Standard "western" tuning - 12 equally-spaced tones / octave
  - abbreviated 12-TET or 12-EDO
- Alternative tuning - anything else
  - scales from other cultures
  - "just" scales - scales based on rational numbers
  - scale periods different from the octave
  - scale period divided into more than 12 tones
  - combinations of the above!

Microtonal music

- Usually defined as an octave divided into more than 12 tones
- Common microtonal scales
  - 19-TET
  - 24-TET aka quarter tones
  - 31-TET

Erv Wilson (Narushima 2019)

Current Outputs / Workflow

Roadmap

References

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