Ron Herrema

ronherrema.net

Sp/ARC

- Specification & Audiation in Real-time Composition

Specification

- *Specification*: An act of identifying something precisely or of stating a precise requirement.

Audiation

Audiation is the foundation of musicianship. It takes place when we hear and comprehend music for which the sound is no longer or may never have been present.

- The Gordon Institute of Music Learning

Audiation

- hearing 'in your head'
- aural fantasy; aural imagination

Audiation & Specification

- Specification: varying degrees of ‘known-ness’, or ‘audiatability’
- Audiation: a known (internal) experience, but requiring ‘transcription’ or ‘realisation’
- Both: not yet *material*; incomplete
 - Completion requires building and/or listening

Why create the Sp/ARC app?

- History of Lisp-based (or list-based) algorithmic composition using Paul Berg's AC Toolbox

Examples

▸ Changing Weights (2000)

Code	Comments
(changing-weights	the name of the function
(random-value 10 25)	between 10 and 25 values will be chosen for each set of probabilities before the next set is used
(random-choice '(60 61))	choose either the note C4 or C#4 for each iteration
'(5 4 3 2 1)	the sequence of probability weightings for the notes in the line above (the sequence is looped)
65	the note F4
'(1 2 3 4 5 6)	the sequence of probability weightings for the note in the line above (the sequence is looped)
(random-choice '(79 77))	choose either the note F5 or G5 for each iteration
3)	the probability weighting for the notes in the line above

Examples

▸ Sixteen Jackies (2000)

Data Section: S-Grief-Clar

Name

Clock Number

Rhythm ☒

Pitch ☒

Velocity ☒

Channel

Why create the Sp/ARC app?

- Experience as a generative audiovisual mobile app developer

Example

▸ *Infinity* (2017)

Why create the Sp/ARC app?

- Recent move into live coding with [TidalCycles](#)

```
Tidal76.tidal
1 p 1 $ midinote "{63 55 62 55 60 55 ~ 60 62 65 62 62}%8" # s "midi" #
2
3 p 2 $ midinote "{79,74,67,36}%8" # s "midi" # sustain 0.5 # gain "1.0 0.97 0.95 0.93"
4
5 p 3 $ midinote "[24,51,55]" # s "midi"
6
7 p 4 $ midinote "{~ [43,55]~ ~ [44,56]~}%8" # "midi"
8
9 p 5 $ midinote "{72*3 72 72 72 72 70 68*5 67 65 67 63 <[60,72,84] [70,82,58]*5 [67,79,55]*5>}%8" # s "midi" # gain 1.03
```

Why create the Sp/ARC app?

- Desire to create an efficient (cross-platform) audiovisual mobile app development pipeline
 - React Native with Tone.js
 - AudioKit on iOS
 - JUCE

The Sp/ARC app:

The Sp/ARC app:

Principles:

- Composing in the continuum
 - Phase shift
- List programming
- Realtime composition/Improvisation
 - Live coding
 - Audiation/Specification
- Deep Listening®

Results:

- Robust cross-platform app
- Engenders engaging music making
- Current constraints (monophonic and mono-timbral) provide a fruitful creative field

Plans:

- Integrated recording
- Bluetooth MIDI
- More timbres?
- Pattern- and set-based techniques
- Stochastic techniques
- Graphic techniques
- Avoiding feature creep

Ron Herrema

ronherrema.net