How To Play the Piano

Live notations in music

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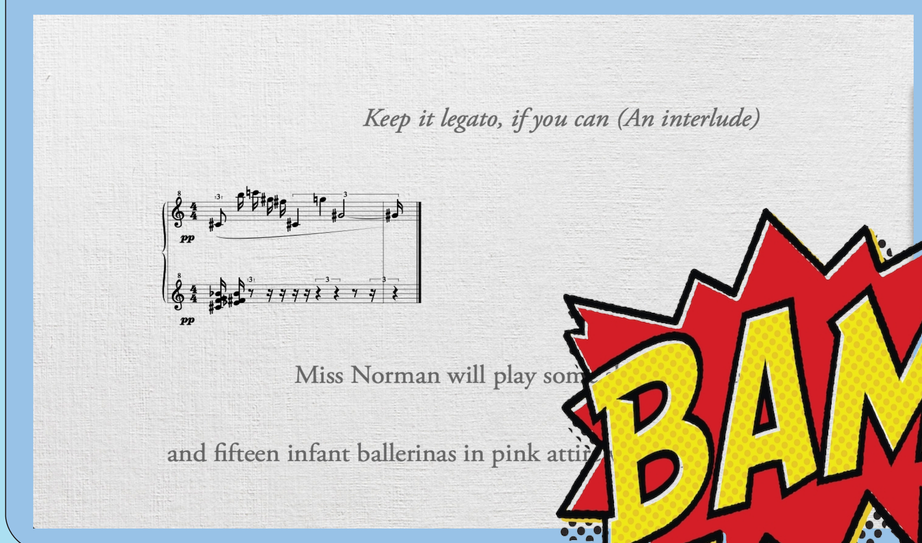
This project involves:
- Live algorithmic compositional processes;
- Generation and formatting of live notation;
- Synchronising live audio and notation;
- Also implementing images (raster and vector) and text;
- Balance between rehearsed performance, interpretation and improvisation.
- 'Translating' between expressive domains

Resources

- SuperCollider audio programming environment (http://supercollider.github.io); INScore augmented score software (http://inscore.sourceforge.net); Kinect sensor v2 and Arduino (footswitch) - Edge Violations only

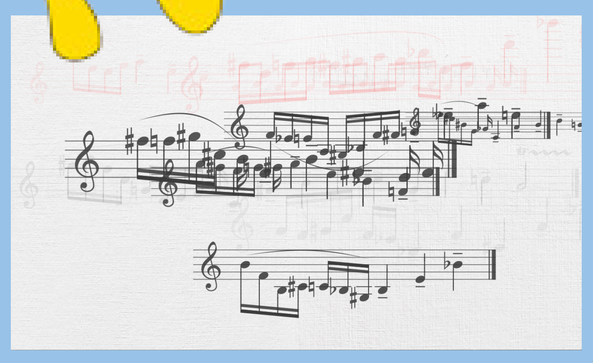
Text

- text is almost universal (per language)
- it is mostly semantic (but compare logographic languages)
- there have been many experiments in algorithmic writing, e.g. oulipo and automatic text generation



BAM!

Music Notation



- music notation is precise
- it is part graphic, part semantic
- it requires expertise, knowledge and practice, but it becomes integral to performer
- highly experimental versions have been produced
- there is a long history of algorithmic composition

Live Notation Performance Modes

Methods of displaying notation

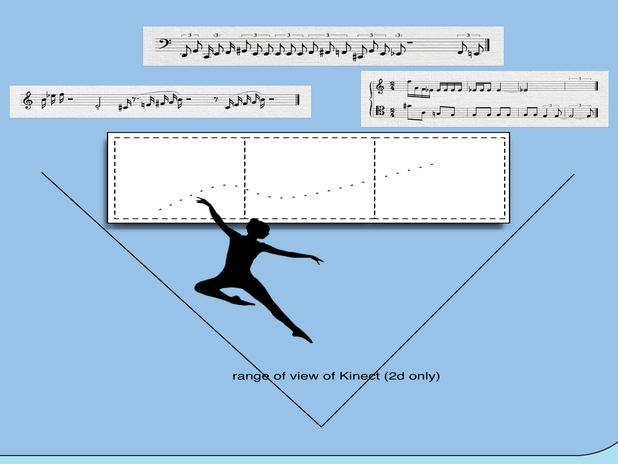
1. Notation is presented note by note, and as each note appears synthesised rendering is played
2. As mode 1 but with no audio rendition
3. Present all generated notes together with audio
4. As 3 but without audio
5. As 3 but with transposition, allowing the performer to 'duet' with the notation

Image

- image is arguably more universal than language
- many experiments in algorithmic/robotic image generation
- it also plays a major part in many music notation systems (especially experimental ones)
- also see: Christian Marclay *Surround Sounds* (2015)

Movement

- exemplified by dance, gesture, physicality
- used with touch in musical expression



Cross-domain Expression

- investigates the illusion of 'stable' translatability
- demonstrates that physical issues (e.g. light and sound) are fundamentally different things
- it is an extension of the composition process, not an absolute thing
- it reflects our imaginations: we are fascinated by cross-domain ideas (e.g. metaphor, analogy and links between music, text and image), but they are not universal or algorithmic in current terms

Code

example code for exploiting cross-domain expression:

```
case
      { ~kinectAvMovTotal[7] > ~sensitivity }

      { Synth("fragmentSynthEnv", [dur:
rrand(0.0, 0.2), amp:8.0, bufnum: ~ianKeysBuff-
er, startPos: rrand(0, ~ianKeysBuffer.num-
Frames), attack: 0.01, sustain: 0.8, release:
0.2, rate:0.5, loop: 1.0, effectBus:~effect]);
}
```

More information:

http://rhoadley.net/how
http://rhoadley.net/edge
http://rhoadley.net/semaphore

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