

# Discourse on Livecoding:

## *Methods and Classification*

Ashlae Blume

Sonic Arts

Recurse Center & Brooklyn College

Brooklyn, NY, USA

ashlaeblume@gmail.com

### ABSTRACT

Musical livecoding is an emergent practice that is at the intersection of computer science, music, digital media, and performance art. A definitive framework for analytically describing music created via livecoding does not yet exist. Through an examination of performance-based practices, we have determined several notable categories for the classification of discourse about musical livecoding. These categories and their motivations are herein described.

### KEYWORDS

Musical livecoding, Creative coding, Music classification, Performance art, Programming.

## 1 Introduction: What is Musical Livecoding?

Musical livecoding (hereafter MLC) is the use of code modified in real-time to produce audio/visual content by one or more people. Some languages at the forefront of the MLC scene include: ChucK, FoxDot, TidalCycles, Orca, SuperCollider, Csound, et. al. (All environments discussed for the purposes of this paper are available as free and open source software.) MLC is done by typing lines of code into an interpreter which translates musical terminology into a lower-level DSP language to generate sound. For example, the FoxDot environment is an event scheduler written as a Python library which talks to SuperCollider [1]. The TidalCycles environment is software which is embedded in Haskell and includes language to work with the SuperDirt synth (also using SuperCollider) [2]. Orca is an esoteric language which creates procedural sequencers that can be interfaced with DAWs, software synths, or hardware [3]. Each such environment employs particular terminology to create sound with musical objects using electronic music techniques. Each environment also deals with musical features such as time, cyclical looping, pattern generation, melody, and rhythm in a slightly different way. The specifics of the terminology and these features shall next be presented in a way which allows the form of expression to guide the analysis of the content.

## 2 Methods

Through working with a variety of livecoding environments, we have observed several trends about composition with MLC. These trends are examined by comparing descriptive terminology used by other livecoders, collected in a series of in-person and phone conversations, to refer to their own and others' practices. Applying abductive reasoning to these observations, we strive to delineate the smallest number of classifying terms to completely

describe the set of music and range of experiences which inform MLC.

## 3 Results

- There are a few distinct categories of music that people use to self-describe, including but not limited to dance, drone, noise, ambient, experimental, et. al.
- Musical characteristics can largely be broken down into groups which include melodic, atmospheric, ambient, rhythmic to non-rhythmic, vocal, and storytelling.
- Most participants have some sort of previous experience with playing instruments or singing.
- Most participants have a relationship with tech and computing or programming. No clear trend has yet been determined as to whether the latter relationship existed previously to, co-evolved with, or developed as a result of becoming interested in musical livecoding.
- Most participants seem to have a sense of identity group of livecoders, as in, they are aware that they are part of an international community of people who are doing this.

## Discussion/Conclusions

Through a series of practical and conversational methods, we have refined our range of inquiry for making comparisons across livecoding environments. If we consider the broadest categories of MLC to be frequency-based, time-based, sample-based, and synthesis-based, a multidimensional spectrum for MLC analysis is apparent. For example, sample-based environments includes TidalCycles and FoxDot. Synthesis-based environments include SuperCollider, Csound, and ChucK, which are also capable of using sampling techniques. Orca lies with in an abstract category and functions as a logic-based or modulo environment. Within the frequency-based categories, we place melodic and harmonic, timbral (ambient, drone, textural) and synthesis-based techniques. Within the time-based category we place iterative, loop-based, percussive and rhythmic, and sample-based techniques. It is not yet clear whether the consideration of these categories and relationships would be best organized as a sort of multi-dimensional spectrum, or whether there is a more unified way of conceiving these classifications.

## REFERENCES

- [1] <https://foxdot.org/>
- [2] <https://tidalcycles.org/index.php/Welcome>
- [3] <https://100r.co/site/orca.html>