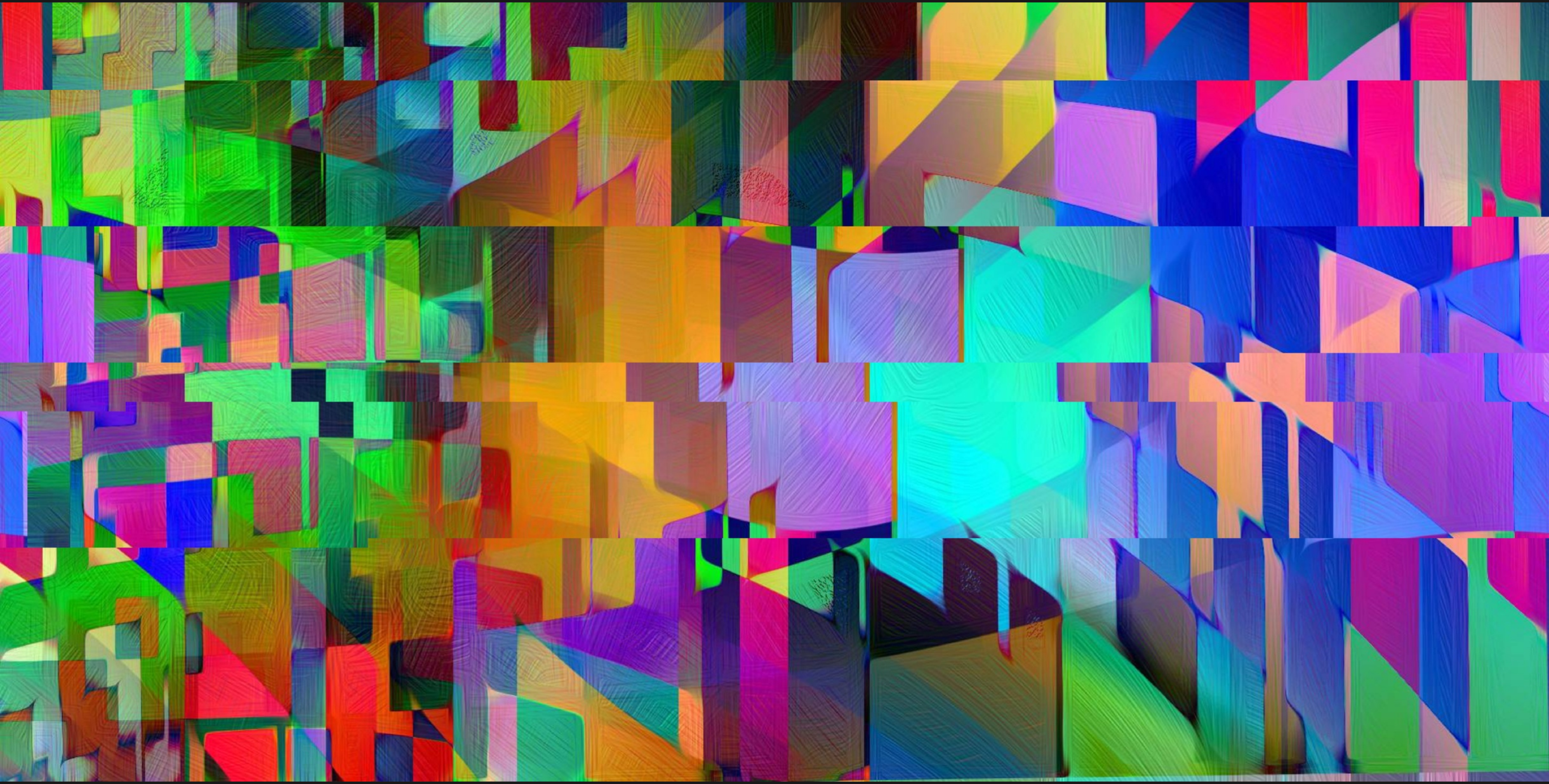


Hybrid Live Coding Interfaces 2021: Beyond the Screen - Xyzzy // Imagination

GOAL

Make music in javascript that sounds as good as the daw

Result - Bitrhythm

80%

Demo

Audio Issues ?

Note all the things you see moving

BITRHYTHM KITCHENSINK

BASE

- Tone.js // Mapped DAW effect chain with Javscript
- Canvas + Code Mirror // Vj with p5 or webgl while audio is playing

KEY FEATURES

- Music Loop
- Dance Tabs
- State
- Knobs and Guards
- Observers

CONVENIENCES

- Dials and Pads
- Samples as URLs and Sample Browser
- Alerts
- Bonus 303!

HARD CODING

- Tracker Notation // Dance Tabs // Music as Data
- No randomness or ML ... stochastic, live, algorithmic coding
- Chiptune / Tracking / Executable Music

```
x000              x000            x000             x000
x[2;^C2;+0.01;_0.1] 0 0 .     *4     x[0.1] 0 x[1] 0     0 0 x[1] 0
- vol, ^pitch, +delay, _pan
// Absolute Pitch, no problem!

// Roma/Gypsy Decimals > Hexadecimals
`0 ~ a ~ 10 ~ 1100
`1 ~ b ~ 11 ~ 1101
...
```

```
// Music Loop
var delta  = 60 * 1000 / tempo / lines * 4;
setInterval(function () {
    always();
    text = getText();
    for (pattern, track_no in patterns) {
        isHit = parse(pattern, track_no);
        editMode ? eval(oldText) : eval(text);
        if (runTansition) { // once
           transition();
        }
    }
}, delta)
```

STATE

Use mem and simple logic to compose notes relative to other notes

```
if (mem["kick_hit_thrice"]) {
    pn("crash")
}
if (bar == 1) {
    transition();
}
```

AUTOMATION AS ARRAY ROTATION AND GUARDS

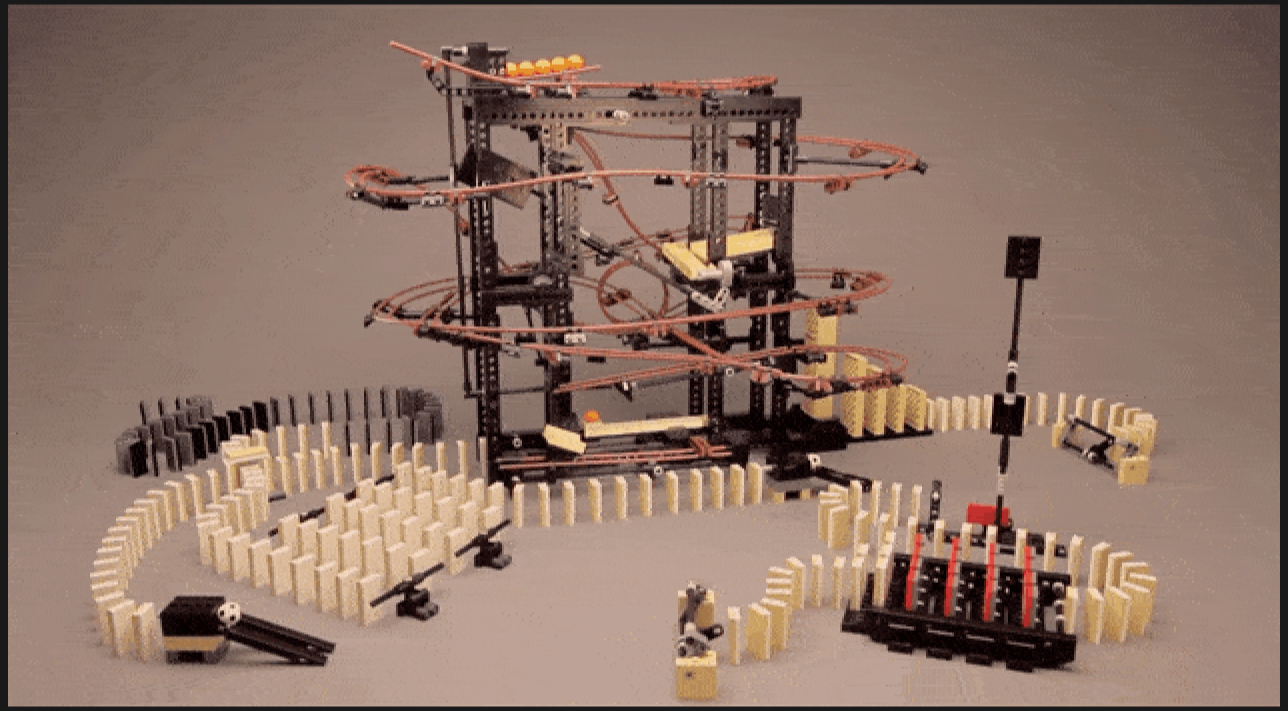
Endless Acid Banger convinced me to model knobs directly

Timers for Swing

```
k1 = knob({
        ramp : [0.525, 0.8, 0.4, 1,
        0.25, 0.75, 1, 0.25, 0.1],
        direction: false,
        step: 0.01,
        "number": dials[2]["cell"]
});
g = guard([-20,15])
always = function () { // run tweak transition
    stab_filter.frequency.value = g(k1.move() * 10);
}
```

OBSERVERS + TIMERS

- bang and spigot from pure data
- encapsulate and trigger internal music actions



CODE IS THE NEW MUSIC SHEET!

Github is the new soundcloud.
Share track as URL for easy remixes and feedback.

- Open Source // Samples are tricky
- Copy Paste
- Chunking
- Prototyping
- Version Control

LITERATE PROGRAMMING

- Chunk vs file, module, object, class, function
- Transclusion (~ iframe) from Xanadu
- Features as chapters
- Minimal implementation with a dictionary and heredocs *in a single file*

~~~~
_ = {}
_["code chunk"] = """ print("hello world!) """
_["doc chunk"] = """# Hello World \n
```
%s
```
"""
_["doc chunk"] =  _["doc chunk"] % _["code chunk"]
write_file(_["code chunk"], "file.py")
write_file(_["doc chunk"], "docs.md")  // spellcheck too!
~~~~

- Journal your code with Todo's, Fixme's, Bookmarks, Bug stories, Inspirations
- Use it as a notebook repository for my coding notes, system administration

Music coders can use lp to share their tracks

Docs

My Music

LIMITATIONS

Sound design and mastering is better done in DAW

Reverb + Recording is laggy

Gc

OTHER PROJECTS

More Apps + Code + Social

Build your own Data Flow Engine

(inspired by Pure Data)

Twixter

Post Issues on Github

HARD CODING - A NEWSLETTER ON MUSIC + CODE

Substack

Support me on Gumroad