



Music Technology, Video Games, and Computer Science

Jared O'Leary
BootUp PD



How to reach the resources

- Direct link is in the chat
- www.JaredOLEary.com
 - Presentations
 - Music Technology, Video Games, and Computer Science



Music Technology

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How can
technology
be combined,
modified, or
created for
new ways of
making
music?



When is music?



When
(and what)
is a musical
instrument?





Video Games

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Film scoring

Orchestral



Film scoring

8-bit



Film scoring

8-bit covers



Flower

Live film scoring



Flower

Live film scoring

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Flower

Live film scoring

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Hall



Flower

Live film scoring

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Flower

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MARIO
323550

🍄 x22

WORLD
4-1

TIME
259



Foley

Super Mario Bros.

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Live Foley and music

Super Mario Bros.



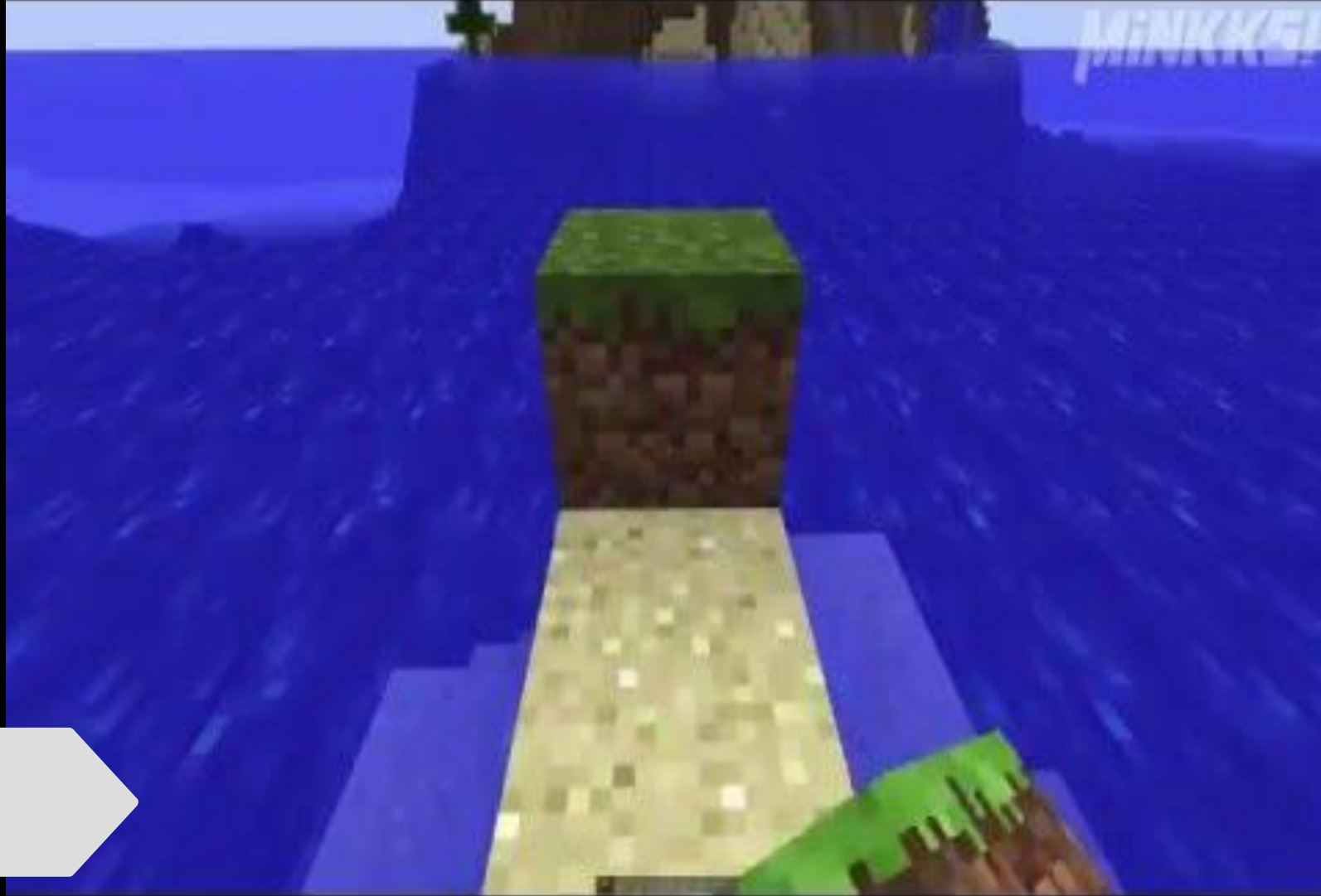
Foley

Soundpack mod



Foley

Creating with SFX



Foley

Creating with SFX

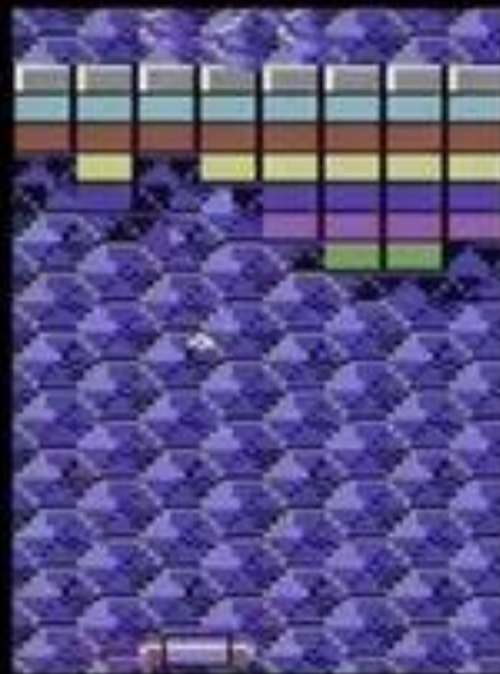
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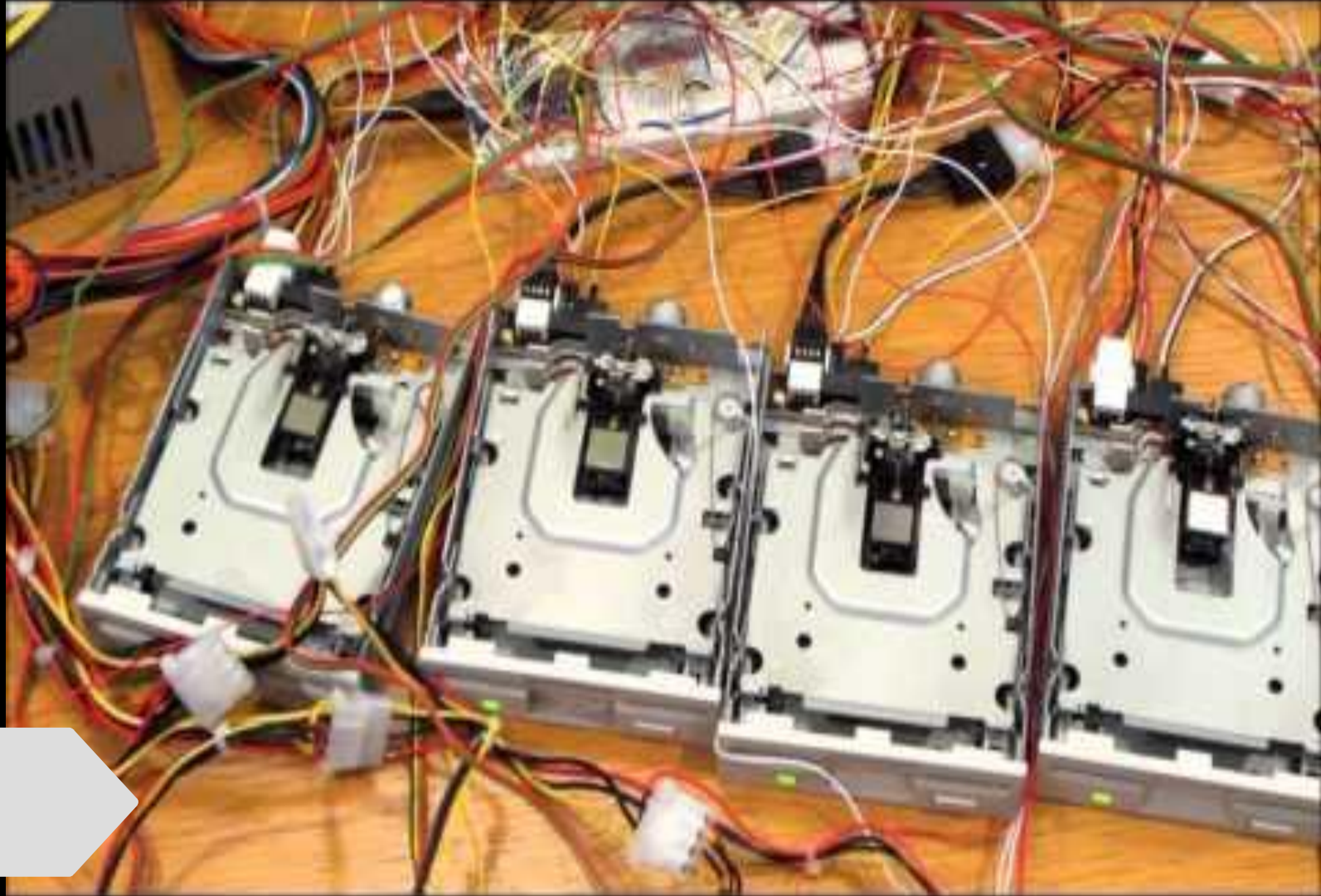
Blurring genres and styles



Blurring genres and styles



Blurring music with computer science





Computer Science

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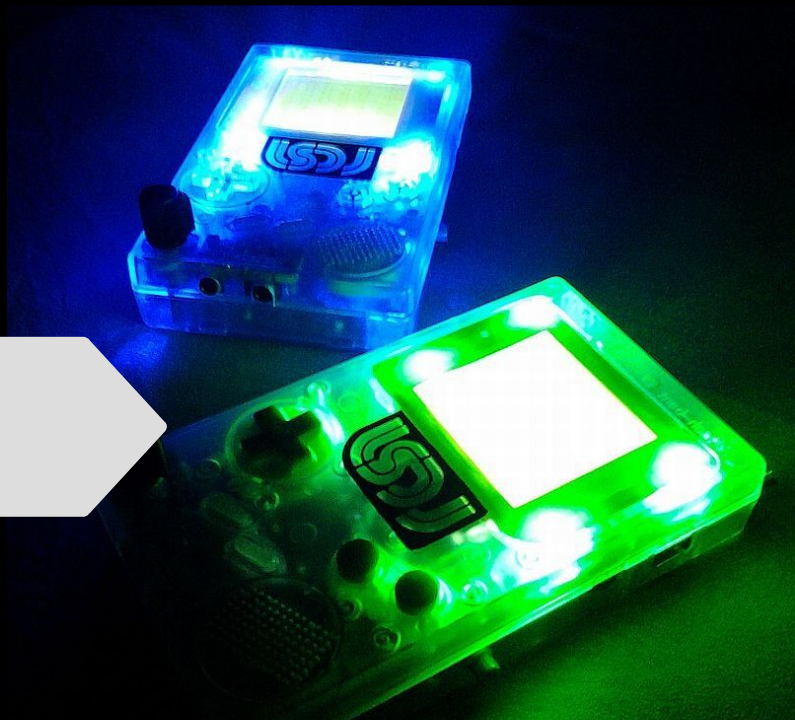
Performance practices

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Maker practices



Aesthetic mods

LEDs



Functionality mods

Backlighting



Functionality mods

Prosound

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Functionality mods

Prosound



Functionality mods

Clocking

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Functionality mods

Circuit-bending



Functionality mods

Circuit-bending



Functionality mods

Other mods

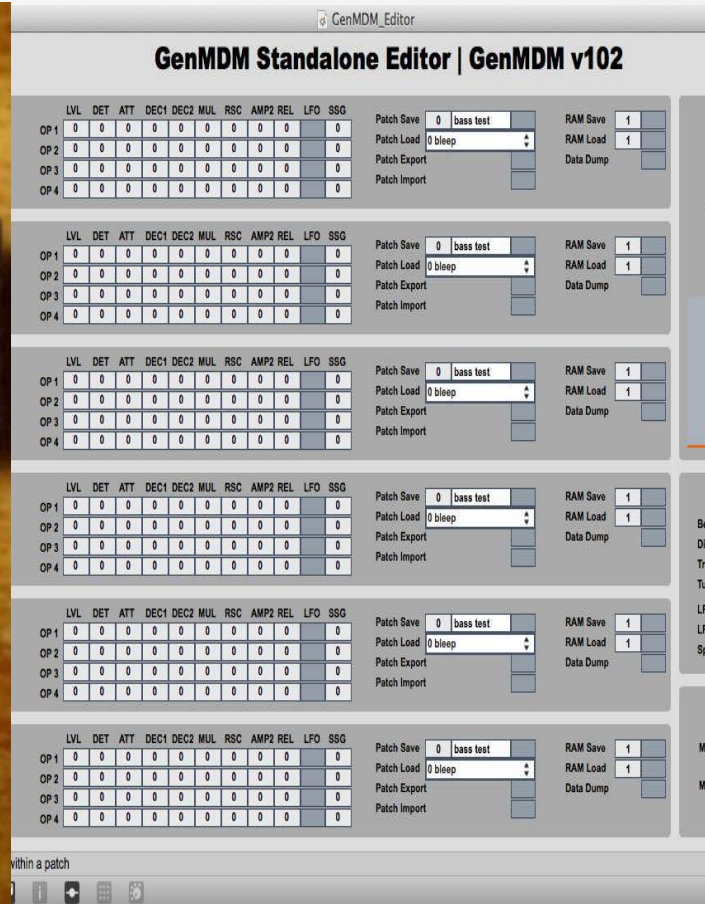


Functionality mods

Other mods



Manufacturing or building new devices



Coding practices

Here's how I'd do it, starting with the version at <https://github.com/trash80/Arduinoboy>;

In the file Mode.ino edit the function switchMode() as follows;

```
void switchMode()
{
  switch(memory[MEM_MODE])
  {
    case 0:
      modeLSDJSlaveSyncSetup();
      break;
    case 1:
      modeMidiGbSetup();
      break;
  }
}
```

And in the file Arduinoboy.ino, change the line;

```
#define NUMBER_OF_MODES 7 //Right now there are 7 modes, Might be more in the fut
```

```
#define NUMBER_OF_MODES 2
```

That should pretty much do what you want.

Software development

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Software development

SONG	PU1	PU2	WAV	NOI	PU1
00	05	7F	04	03	
01	06	7F	05	03	
02	01	02	00	03	188
03	01	02	00	03	
04	01	02	00	03	1
05	01	02	00	03	2
06	07	08	09	0A	WC 6
07	20	08	09	0A	NC 5
08	21	29	09	0A	
09	0C	00	0E	13	
0A	11	10	12	0F	
0B	15	14	17	16	
0C	01	02	00	03	
0D	01	02	00	03	P
0E	22	08	09	0A	SCPIT
0F	23	08	09	0A	G

Creating music with code



Live coding

```
1 Report: Sound.Tidal.MIDI.Output
2 Report: Sound.Tidal.VoiceKeys
3
4 keyStreams ← keyProxy 1 6 keys [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16]
5
6 [bd,k2,k3,k4,k5,k6,k7,k8,k9,k10,k11,k12,k13,k14,k15,k16] ← sequence keyStreams
7
8 bpm (120/150)
9
10 k16 6 note "[44 66 64]M16"
11 |> kenvtff "0.5"
12 |> vofegint "0"
13 |> ifrate "0.01"
14 |> ifcuttoffint "0.5"
15 |> actum "0"
16 |> portamento "0.1"
17 |> sustain "1"
18 |> dur "0.15"
19 |> attack "0"
20 |> voice "0.5"
21
22 dl 0
23 stack [
24 sound "MIDI2P16",
25 sound "s:2 [- k:3] - k:2 k:3 - k:1 -" |> steps "0.5",
26 sound "~ - = [- x]",
27 sound "~ - = [- 1001 - -]" |> speed "0.5",
28 foldEvery [0,4] (0.25 0) 0
29 almost (density) [1, 1.5, 1, 1, 4] 0 also + 6 (strata 16 0 sound "[frs]**4") |> gain "0.5" |> speed "[1 0.5, [1.5 2]/2]" |> delay "0.4"
30 1 |> delaytime "0.5" |> delayfeedback "0.5"
```



Welcome to my website!

A decorative graphic on the left side of the slide. It features a grey arrow pointing right at the top, and several thin, curved lines in black and grey that sweep upwards and to the right, framing the text area.

Let's chat

- How can technology be combined, modified, or created for new ways of making music?
- When is music?
- When (and what) is a musical instrument?