Real-time audio analysis in Python

Brian Clee - 1/11/19
https://github.com/cleebp/rta

Project goals

Macro:
 Real time audio visualization off the soundcard

Micro:
 Capture live soundcard stream, analyze the spectrum data, and draw a visualization in real-time

 All in open Python ^.^

Stack

Python3.7

iShowU Audio Capture for virtual audio routing

PortAudio/PyAudio for capture/streaming

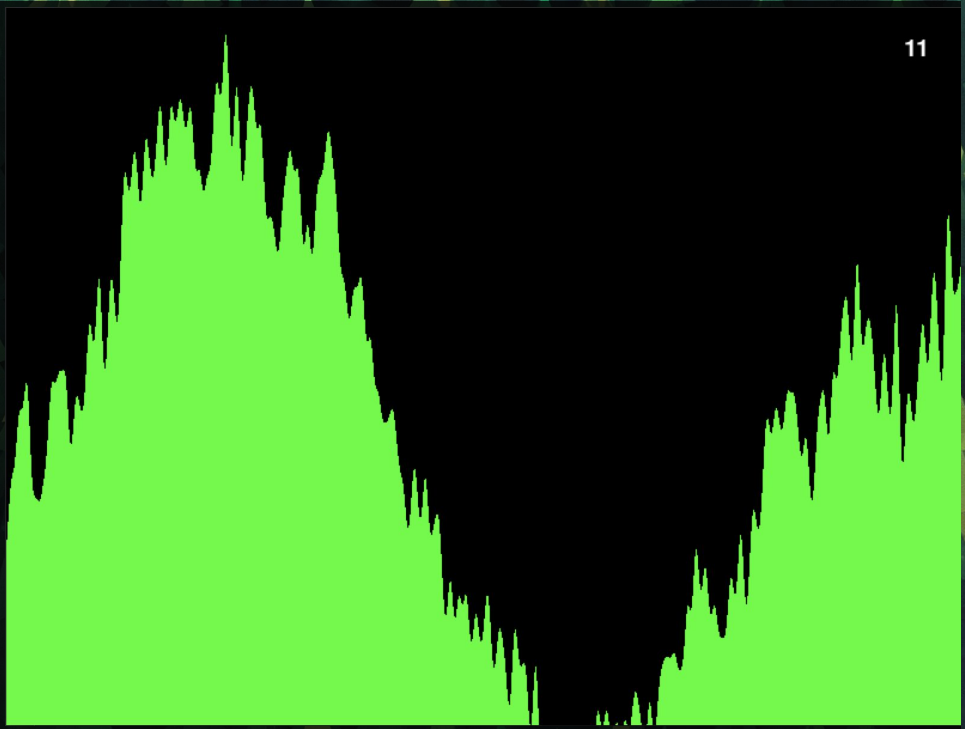
NumPy for audio spectrum maths

PyGame for drawing 2D graphics

v0.1.0

Audio capture and streaming
Basic analysis
Terrible drawing (11fps)

I don’t even have a .gif
 of this trash ->

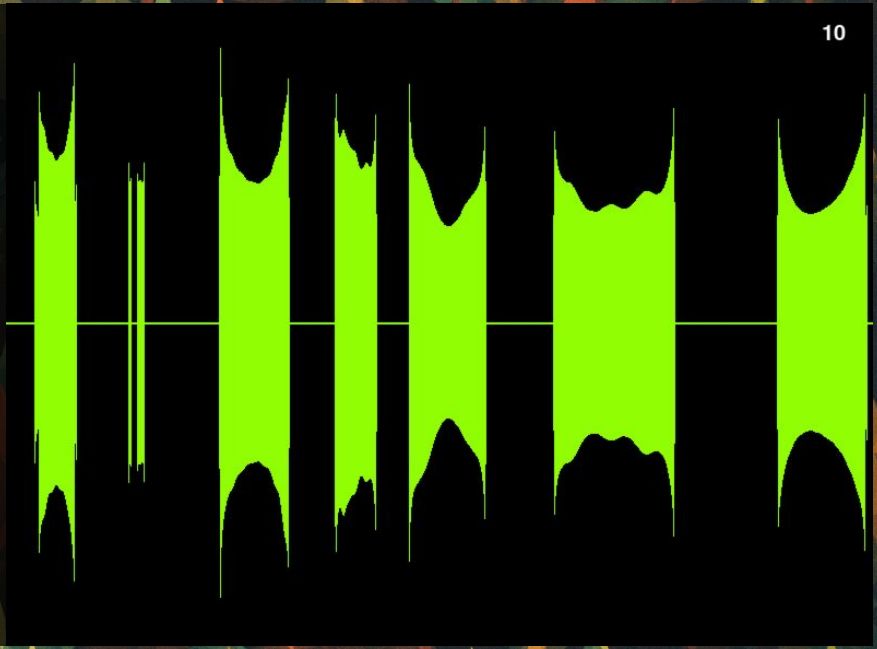


v0.3.0

Better maths, logs and
 normals are great

Better drawing,amplitude down,
 flip it and reverse it...

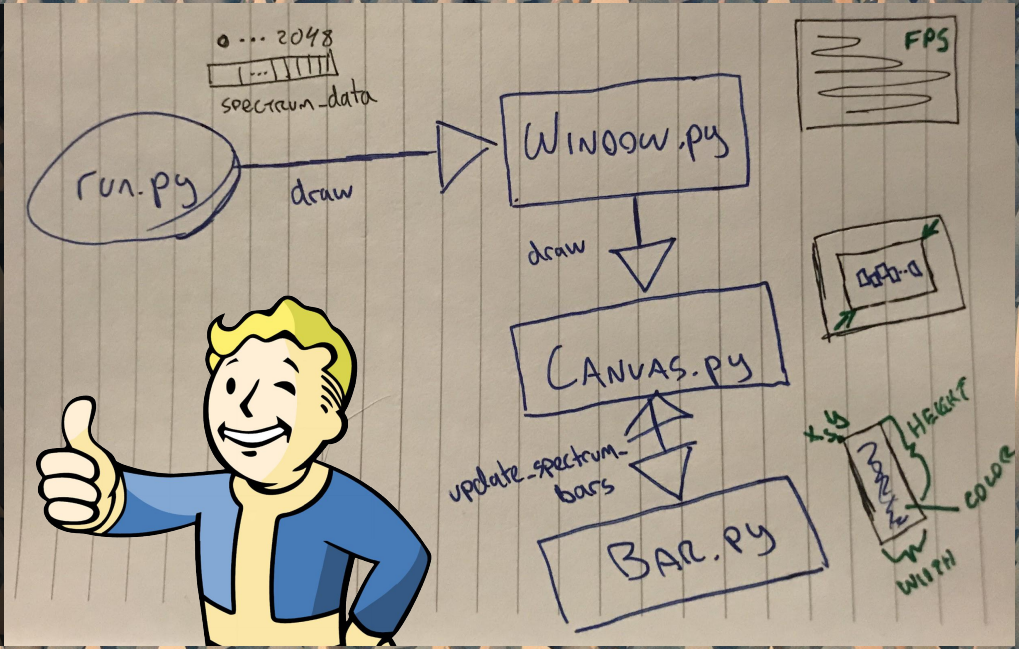
Poor drawing speed (8-10fps)



v0.4.0

Object-oriented refactor!

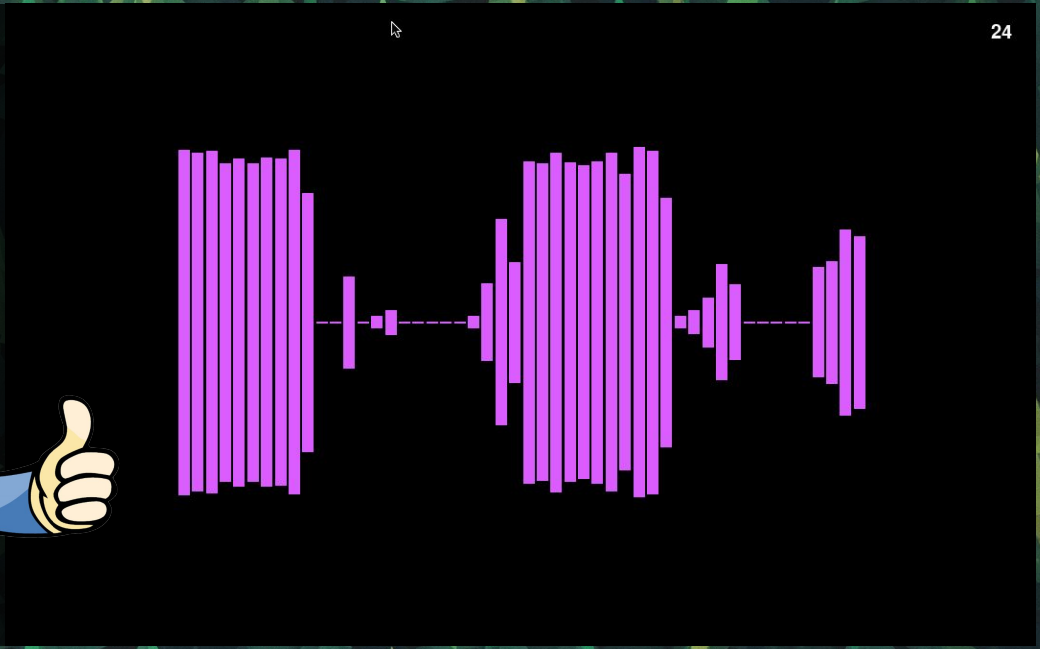
Much more efficient
 30fps, can play with fps
 caps that look nicer



v0.4.0

Object-oriented refactor!

Much more efficient
 24fps is rad but 2quick



v0.5.0

… next steps

Keyboard input
- TAB: switch between mirrored amp vs positive amp
- C: switch between rainbow, and presets
- F: toggle fps display

Background image support, eventually .gifs

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Cheers

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