

GOING ON A DATA BENDER

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What is Databending?



The process of manipulating data in unintended ways (e.g. using another medium) to achieve unpredictable results.

Inspired by circuit bending - i.e. intentionally short circuiting an instrument to produce unpredictable output

“Whatever you now find weird, ugly, uncomfortable and nasty about a new medium will surely become its signature. CD distortion, the jitteriness of digital video, the crap sound of 8-bit - all of these will be cherished and emulated as soon as they can be avoided. It’s the sound of failure: so much modern art is the sound of things going out of control, of a medium pushing to its limits and breaking apart. The distorted guitar sound is the sound of something too loud for the medium supposed to carry it. The blues singer with the cracked voice is the sound of an emotional cry too powerful for the throat that releases it. The excitement of grainy film, of bleached-out black and white, is the excitement of witnessing events too momentous for the medium assigned to record them.”

— Brian Eno, *A Year With Swollen Appendices*



Kinds of databending.



Reinterpretation:

Use data from one medium in another

- make music/beats with images
(glitch music)
- open and edit executable files in an image editor
- play a building with a piano

Incorrect Editing

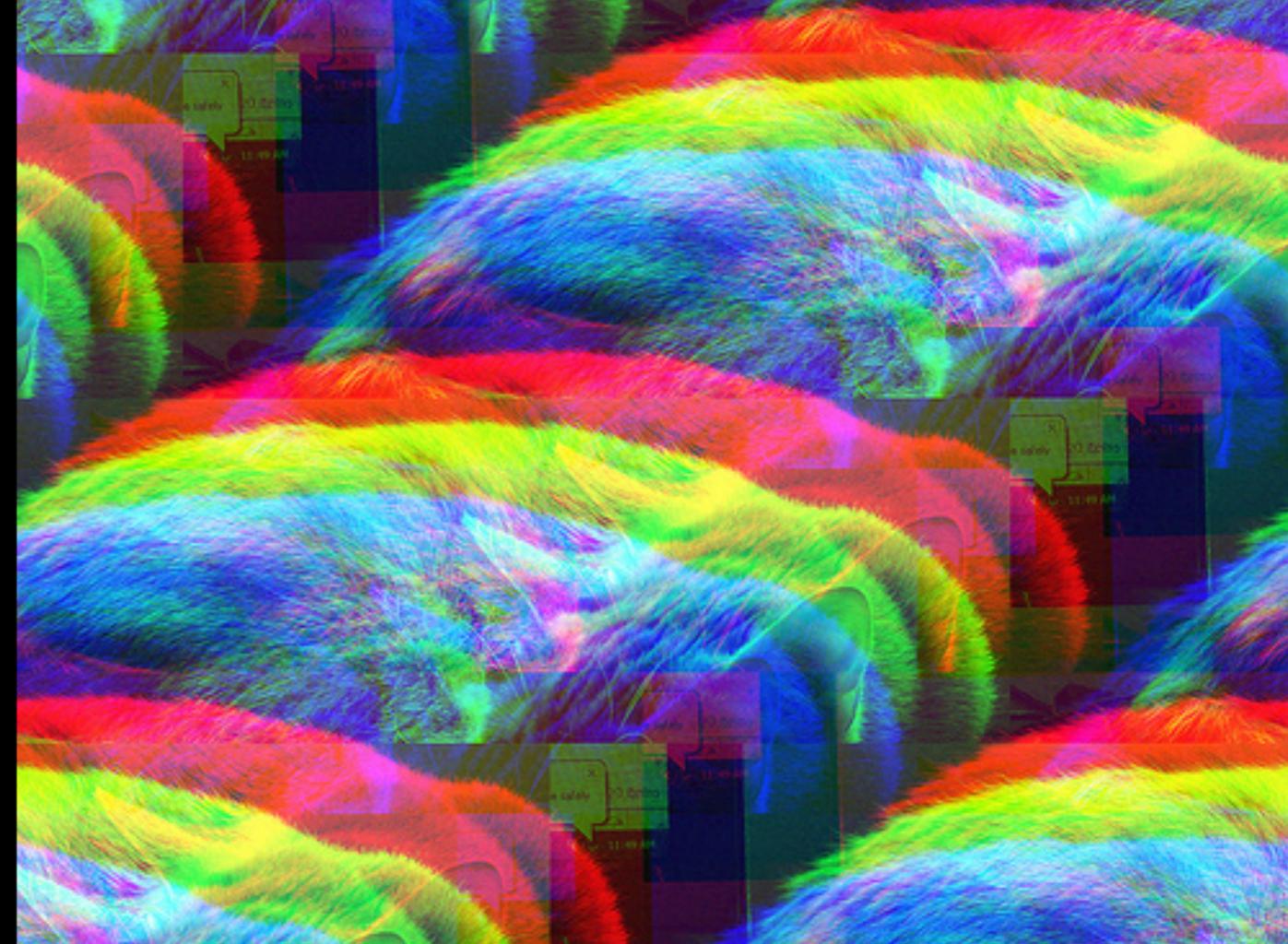
Manipulation of files designed for one format using another format.



Forced errors

Intentionally exploiting bugs in software to generate unpredictable output.

Databending images with audio effects



Take raw image data and treat it as PCM data in a WAV editor like Audacity. Often yields results somewhat analogous to their intended effect, and much quicker than hex editing.

Highly destructive and still somewhat tedious.

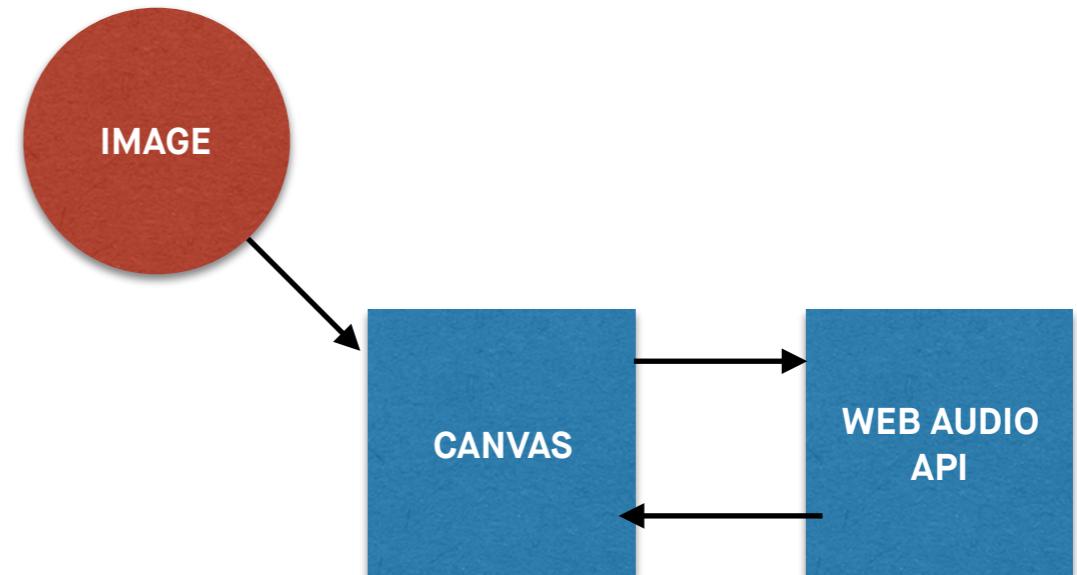
AudioShop is an improvement but does not immediately support real time editing. Uses ffmpeg for conversion and sox for audio processing.

Realtime? Enter Javascript...

Data bending with Javascript

Databending an image in Javascript with audio effects requires three steps:

- **Convert** : Convert image to raw binary data buffer using Canvas
- **Bend** : Pass buffer to OfflineAudioContext via Web Audio API, manipulate source and connect effects as desired, and render to a new buffer
- **Draw** : Pass rendered buffer back to Canvas and draw the results



What Next?

- "Drawing" tools
- Gifs
- Video?
- MIDI triggered image manipulation

“Sometimes out of despair, when we have given up, the stone itself sends a message —should one say bit by bit—so that we may receive it. Finally everything falls into place and emerges with a precision so remarkable it cannot be chance.”

ISAMU NAGUCHI

Resources

Demo - <https://mvattuone.github.io/webaudio-databend/Tuna.js> - <https://github.com/Theodeus/tuna>
Audio Shop - https://github.com/robertfoss/audio_shop
stAllio's way - <http://blog.animalswithinanimals.com/>
Typed Arrays: Binary Data in the Browser - https://www.html5rocks.com/en/tutorials/webgl/typed_arrays/

THANKS

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