

# SYNTH HACKS #11

## VISUALIZE THIS

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Why are people who show us the future called *visionaries*? It seems to me like there should be an audio component to that, and now there is: I recently got a gadget that lets me connect my phone to a projector and generate swirling, wall-size videos as I play. The Apple Lightning Digital AV adapter (Figure 1; \$49) has a Lightning plug on one end and an HDMI jack on the other. Wire it to a TV or projector, fire up a music visualizer app, and you've added a whole new dimension to your sound. These adapters are also available from third-party manufacturers and with USB-C plugs for Android devices.



Fig. 1

With an HDMI adapter and a visualizer app like Vythm JR, you can drive a projector from a smartphone, creating visuals that respond to your music.



Fig. 2

Vythm JR offers bountiful controls, including a tempo-synced LFO and MIDI Learn. When you record a performance, the app captures just the visuals, not the control overlays.

As for music visualizer apps, there's a plethora out there. Typically, they measure the amplitude of several frequency bands in the audio and use that to modulate shapes and colors in the generated video. What's astonishing is that almost fifty years after the original Atari Video Music visualizer came out, many of these apps are still crude and artless. Most look like jiggling oscilloscopes or a spilled box of Triominos and pick-up sticks, so I was excited to discover an iOS/Android app called Vythm JR that was clearly designed by musicians (see Figure 2).

Turns out that the "JR" stands for Jordan Rudess, the virtuoso synthesist and longtime iOS enthusiast. I contacted him and developer Marvin Krüger and asked what inspired them to create this. Rudess said two features he thought were missing from

other visualizers were deep, hands-on control and a variety of graphic styles. Vythm has a monstrous number of parameters, but you can easily assign them to macros and MIDI events so you can play the app like an instrument. Or you can simply call up the numerous presets Krüger releases as paid upgrades, (the basic app is free), which offer entirely new looks, from fractals to fluids.

Since I was using my phone's Lightning port for video output, I grabbed a Bluetooth MIDI controller to shape Vythm JR's visuals. The response was instant and expressive, which got me thinking it could be cool to set up a dedicated phone for every player in a band, each feeding a different projector or screen. Or going in the opposite direction, I thought about projecting randomized text from the raunchy Inspirobot ([inspirobot.me](http://inspirobot.me)). Since our brains love to seek out patterns, the random words will invariably sync up with the music—or at least function as oblique strategies, prompting the performers to react.

Another favorite app highlights a new direction in visualizers: augmented reality. Beatsy for iOS (see Figure 3) manipulates video from your phone's camera rather than synthesizing it. You select a flat surface, which the app then extrudes and animates to match the audio. Both Beatsy and Vythm can render their output to video files, so you can quickly turn your songs into stylish movies for sites like Instagram, YouTube, and Facebook that snub audio files. With these tools literally at your fingertips, you can make an auditory world...visionary.



Fig. 3

The free Beatsy app warps the camera signal to match incoming audio. On devices with LiDAR like the iPhone 12 Pro, it can even mask out foreground objects.