

Project Title: Music Visualisation with Audio Beat-Matching

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Project Description:

This project will involve real-time audio processing and extraction of musical features such as beat, duration, and pitch. These features will then be used for real-time music visualization, of which we have several options to choose from of varying difficulty levels. The most involved visualization process will involve manipulation of pre-programmed fractal images, that will zoom, twist, and change color according to these properties. An example of what the fractal image might look like is shown below.

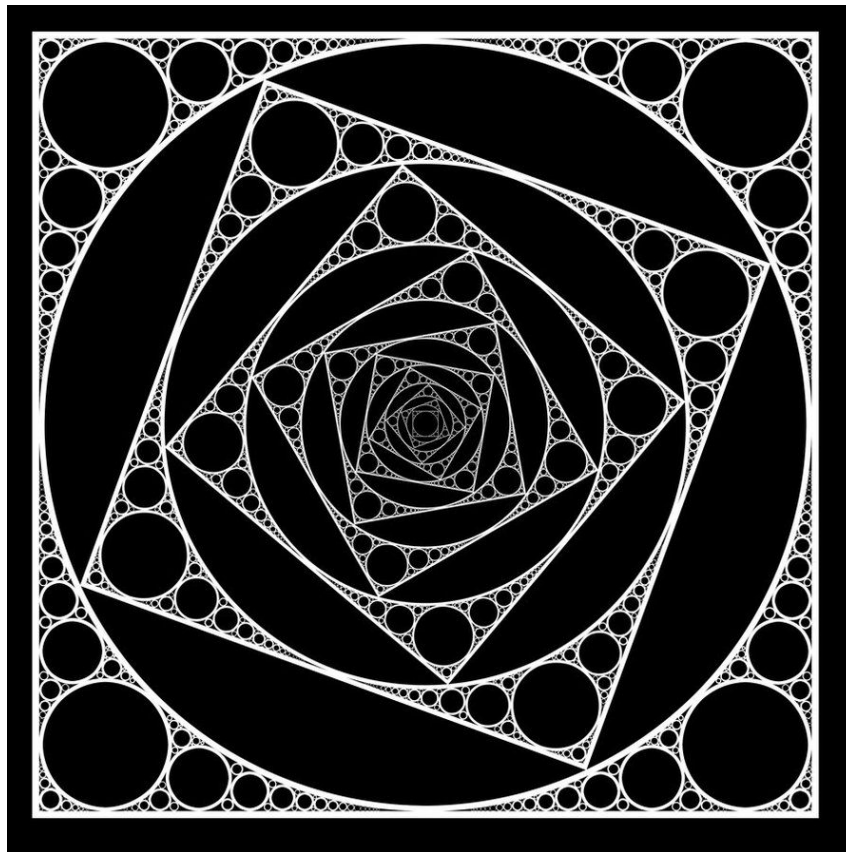


Figure 1: Fractal music visualization

The more feasible visualization will involve generating an audio spectrum analyzer on the computer screen, which would have changing bar sizes, colors, and movement. An example of what this might look like is shown below.



Figure 2: Audio spectrum analyzer

And the most simple option would involve driving an LED array, which could map the features of the music to the pulsation, luminance, and color of the LEDs.