

Let's Make Dubstep!

Background:

I want to be a world famous DJ but unfortunately, learning music production is difficult, and my attempts have been decidedly unsuccessful. Perhaps a computer can do this for me. I would like to focus on dubstep for a few reasons. First, I think dubstep lends itself nicely to being made by computers. It doesn't contain many vocals, and it doesn't contain as much emotion as other genres (which I believe would be the hardest aspect of music for machine learning to reproduce), it focuses more on sound distortion. Also, it is the genre that I have spent the most time attempting to make, so hopefully having an idea of a typical song structure will help me tune the model.

Data:

As many MIDI files as I can get. MIDI is an acronym for Musical Instrument Digital Interface. They don't contain actual audio, but describe what notes are played and when they are played. They are then loaded into a software program that knows how to interpret the data. I have collected MIDI files from a number of dubstep artists. There are many free sources for MIDI files, in addition it is possible to make MIDI from audio using the DAW (digital audio workstation), that I own (FL Studio). This may require me to make some manual corrections within FL Studio, but I think will produce a superior result than using only publicly available MIDI's. This is because I will be able to train the model on specific artists and styles.

Libraries:

Multiple libraries exists for music production within python. One of these is music21, created by MIT. Another is Magenta, which unfortunately has a plugin for Ableton Live but not for FL Studio. Based off my initial research, most machine learning models for music use LSTM.

MVP:

Create a MIDI file by training a model on dubstep that a human would be able to interpret as dubstep.

MVP+:

I believe the possibilities are endless. One huge improvement over a simple MIDI would be to export that MIDI to FL Studio and assign it to different instruments/synths. Unfortunately, linux isn't ideal for music production, but there are ways to install and use FL Studio in linux. Also, as stated earlier, there are no direct plugins for FL Studio, so this will have to be done manually.