Springboard--DSC Program
Capstone Project 2 Proposal

Music Genre Classification from Audio Samples
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The Problem

The classification of music by genre is a common problem with current applications, for instance recommendation engines used by companies like Spotify and Pandora. The inherently subjective nature of music makes systematic description and classification difficult. In the past machine classifications were made according to song metadata (Artist, label, etc.), but it is increasingly possible to achieve this using the audio data themselves.

The Data

The Free Music Archive was compiled for purposes of evaluating various tasks in MIR (Music Information Retrieval). It contains over 100,000 songs in both 30 second clips and entire tracks. It also contains extensive metadata about each track such as artist, genre, etc., as well as extracted audio data such as MFCCs.

The genre data is multilabel, many songs are classified as for instance rock and blues.

Proposed Solution

- Extract features from audio samples
- Explore the extracted data, and explain the features selected such as:
    - MFCC
    - Spectral features
    - Tempogram
- Use applications of deep learning to classify the music samples based on the extracted data.
    - Use extracted features or just audio clips
    - Different neural network architectures in series or in ensemble:
        - ConvNet
        - SLTM

Deliverables

Report with slide deck and Jupyter notebooks with code.