

CSD300 : Design Project  
Music Genre Recognition

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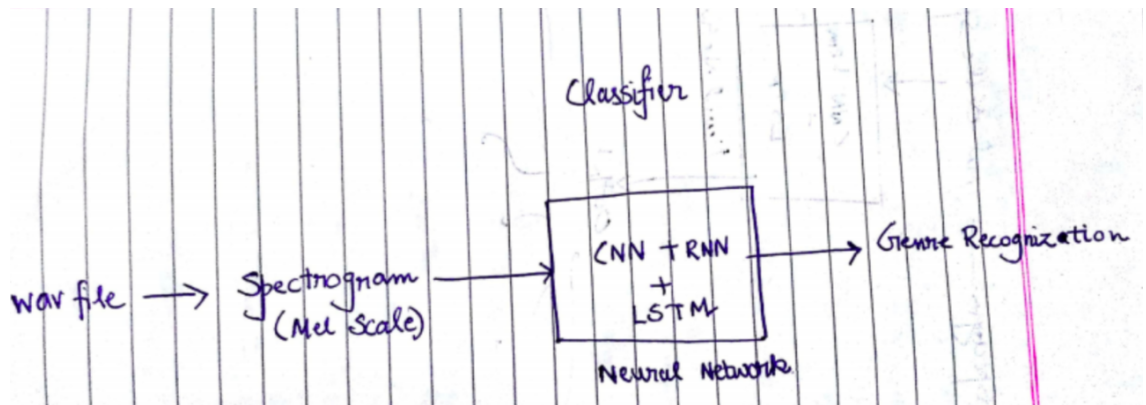
## 1 Problem Statement:

Wikipedia defines music genre as a conventional category that identifies pieces of music as belonging to a shared tradition or set of conventions. Classifying songs according to genre is something that has been till now done by human tagging. The necessity for such a tagged dataset arises for any music search engine that aims to suggest similar songs to the user. Characteristics that define a song to be in a particular genre are usually somewhat abstract and often a song may have overlapping genres. To automate the task of genre classification one first needs a suitable feature vector to represent the song. We aim to classify genre independent of the metadata (artist information, lyrics etc).

## 2 Methodology:

Here's a general overview of what we will do:

- Extract a simplified representation of the songs (.wav file).
- Train a neural network to classify the songs.
- Use the classifier to find the genre.



## 3 Tools/software required:

- **Librosa:** is a python package for music and audio analysis.

- **PyTorch or Keras:** for neural networks.
- **Google Colab:** for training the model on GPU.

## 4 Data collection:

This dataset was used for the well known paper in genre classification "Musical genre classification of audio signals" by G. Tzanetakis and P. Cook in IEEE Transactions on Audio and Speech Processing 2002. The dataset consists of 1000 audio tracks each 30 seconds long. It contains 10 genres, each represented by 100 tracks. The tracks are all 22050Hz Mono 16-bit audio files in .wav format.