CS345 Project Proposal

Team Members:
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Goal:
Our project will be looking at how a Neural Network can be used to classify the genre of a song based on hidden features in the visual representations of audio. We will train a Convolution Neural Network in the hopes of creating a classifier that can look at the spectrogram of an audio clip and make a correct classification of that clip's genre. A Random Forest model will be used as the baseline classifier on which we can compare the effectiveness of our Neural Network.

Dataset:
GTZAN Dataset - Music Genre Classification
This dataset is made from 30 second audio clips from 10 music genres with 100 samples for each genre. There are .wav audio files, spectrograms made from the audio clips and then two different .csv files. The first file contains data on the whole 30 second clip where the second file is data on the audio where the 30 second clip has been turned into 10 three second clips.

Machine Learning Models:
- Convolutional Neural Network trained on image spectrograms.
- Random Forest trained on data from audio clip as the baseline.

Steps and Deadlines:
1. Clean csv data removing unusable and unnecessary data: April 1st
2. Train Baseline Random Forest Model: April 5th
3. Learn how to import images into python for CNN: April 8th
4. Begin working with a CNN model: April 10th
5. Finish optimizing and adjusting model: April 26th
6. Begin final report: April 28th
7. Final due date: First week of May

Team Work:
- A GitHub repository has been created to share the different parts of this project.
- Communication should take place on Microsoft Teams.
- Work on models and notebook should be cooperative.