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NLP Project Final Proposal

Objective –

As music is now accessible than ever to anyone with internet, it’s become a challenge for listeners to explore music they like. One way to combat this challenge to classify similar songs by genre assuming that a listener likes to a particular type of music. Therefore, my objective of this project is to explore a method to identify similar songs by using genre classification. More specifically, I want to build models to see if we can identify the genre of a song by using NLP on lyrics.

Data –

I’ll be using a list of over 55,000 songs and lyrics from Kaggle in order to classify the genre of songs. Then, scrape data from Spotify API in order to attach genre tags for each song.

Spotify doesn’t identify genre by songs but by artist. Therefore, we’ll assume that each artist produces similar type of genre and all the songs under that artist will have the same genre tag. Because there are more than one genres per artist, I will use the first genre of the list for classification.

Methodology –

To analyze of the data, I’ll use Latent Dirichlet allocation using the GenSim package in python to see how each word make up the generative topics. Since I’ll be tagging the true genre of the songs, I’ll be analyzing if there are any specific words that attribute to a genre of a song.

The predictive model will follow to similarly to the methods from two blogs: the first blog was on predicting sentiments from movie review and the second one was on using song lyrics to associate mood—the links are in the footnote. Using Word2Vec model for word embedding as input to a Long Short-Term Memory neural network using keras on python to build a multi-classification model.

Results –

Since there is the true value from Spotify, I will use confusion matrix to compare how accurately the model classified a song to its genre.

Footnote:

1) <https://machinelearningmastery.com/predict-sentiment-movie-reviews-using-deep-learning/>

2) <https://xindizhao19931.wixsite.com/spotify2>