

Music Genre Classification

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Are lyrics alone
enough to tell what
genre a song
belongs to?

- Gather music data (song titles, artists, lyrics, genres), possibly from Spotify API or Kaggle
- Implement machine learning algorithms and techniques to classify different music genres from music lyrics

Checkpoints

- ❑ Research tools/packages/libraries to utilize for classification
- ❑ Research 'top' algorithms for text classification
- ❑ Gather music dataset that contains lyrics and genres
- ❑ Perform data preparation
- ❑ Implement classification model(s)
- ❑ Analyze results and observe accuracy

Research & Dataset

- [Predicting a Song's Genre Using Natural Language Processing](#)
- [How We Used NLTK and NLP to Predict a Song's Genre From Its Lyrics](#)
- **Text Classification:** Categorizing text into organized groups
- Scikit: Python library containing tools for machine learning, such as feature extraction classification
- Keras: Python library containing MORE tools for machine learning, used for building models
- Dataset -> [Music Dataset: Lyrics and Metadata from 1950 to 2019](#)

Models

- Count Vectors & TF-IDF Vectors as features
 - Levels: Word, N-Gram, Character
- Naive Bayes
- Linear Classifier (Logistic Regression)
- SVM

Results

Not ideal...

NB, Count Vectors: 0.37501762300860003
NB, WordLevel TF-IDF: 0.3678274354997885
NB, N-Gram Vectors: 0.29677146482447486
NB, CharLevel Vectors: 0.34808966586775697

LR, WordLevel TF-IDF: 0.38573241223741717

SVM, N-Gram Vectors: 0.30565346115888903

So... How do we determine the genre of a song?

“The description of a genre is a collection of patterns. Songs that share patterns can be grouped in a genre that describes those patterns. You can find these patterns in any music dynamic: rhythm, speed, progression, key, instrumentation, whatever. You determine the genre of a song by identifying these patterns, and associating them with the description of a genre.” -Anton dB via musicfans.stackexchange.com

Final Thoughts