Song Recommender

04.19.2021

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Overview

We are seeking to use a mood and target genre as inputs to a model and output a song or group of songs based on these traits from the target's Spotify.

Questions

- Can we predict the mood of a song?
- What sort of information is there to use about a song through the Spotify API?
- Can we predict the mood of a human using facial recognition (library)?
- How can we build a model to make a song/playlist recommendation for us?

Goals

1. Use the Spotify API to scrape songs and their associated metadata from Spotify.
2. Predict a users mood using facial recognition
3. Predict the mood of a song using either a library or our own model
4. Be able to match both of these predictions together into a recommendation

Team Outline

- **Brendan**
  - Combine mood, and target genre into dataset
  - Attach mood to song
  - Build model
  - Final report
- **Jonathan**
  - Scrape songs from Spotify API
  - General software engineering team manager
  - Build user interface
- **Michael**
  - Build model
  - Co-engineer interface
  - Final report and visualizations

Final Deliverables

Goal: Be able to give a recommendation using a notebook and any helper files

Reach Goal: Communicate recommendations through a web app interface

Reach Reach Goal: Be able to produce our own song based on mood and genre/instrument

Timeline (weeks of the quarter)

1. na
2. na
3. na
4. **Project Kickoff / Software Engineering Process**
    a. Setup Repo
    b. Clearly define roles
    c. Initial Exploration
    d. Research Libraries
5. **Data Engineering**
    a. Produce dataframe of scraped songs with mood
    b. Combine mood/genre into target DF
    c. Begin model research
6. **Model Design / Implementation**
    a. Design model / start implementation
7. **Model Implementation**
    a. Finish Model Implementation
8. **Hyperparameter tuning**
    a. Tune model with goal to improve accuracy
9. **Conclusion**
    a. Visualize results
    b. Summarize findings into report
    c. Build interface
10. **Extra Time**
    a. Software project usually take more time than expected