MoodSync

A Mood-Based Spotify Song Recommendation System

By: Tabassum Meer

Problem Area

- How can we use machine learning to improve music recommendation for users to quickly create personalized playlists based on their mood?
- Currently, there is a lack of intelligent automated features that enhance the user experience of music streaming platforms such as Spotify
- Spotify has experimented with an AI feature called 'DJ'
- Opportunity to enhance music recommendation by integrating this feature into playlist creation
- Refine 'DJ' to generate playlists based on user inputs such as mood, offering a more innovative and personalized music experience

Vision

- Use clustering and unsupervised learning to group songs by audio features
- Sample the groups to determine and assign them a mood label
  - Select 10 most common moods through independent research
  - Research the most common audio features of the selected moods to accurately label the groups
- Train and evaluate different supervised learning techniques to determine the best model

Impact

Enhancing user experience meets the widespread demand for efficient and personalized playlist creation, impacting millions of users.

- User retention and loyalty
- Content acquisition
- Positions Spotify as an innovator
- Marketing
- Strengthening investor relations
- Feature development

The Dataset

- The dataset will be scraped from the Spotify Web API's get-audio-features endpoint
  - Tracks will be sampled from Spotify Million Playlist dataset
  - Since this involves scripting and the API is rate limited, preliminary EDA was conducted using a dataset available online that followed the same process

+ No nulls or duplicates

+ 34.2k rows of songs

+ 11 numerical features
5 categorical features

Next Steps

- Make a decision on the trade-off between complexity and usefulness of using additional data from the Spotify Million Playlist dataset vs. the dataset that was used for preliminary EDA
- Research clustering techniques and models required to support the vision
- Investigate how audio features can convey mood, aiming to understand the distinctive audio characteristics linked with specific moods
- Add the mood labels to the dataset
- Develop code to implement models

Thank You

Despacito

Luis Fonsi, Daddy Yankee

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