Development Track

Coordinator: Eric Armendariz - earmen3@illinois.edu

Andrea Zhou - andreaz3@illinois.edu

Angela Lam - puiyuyl2@illinois.edu

Our proposed development is a standalone Web-based music recommendation platform designed for Spotify users and the broader audience in search of a deeper lyrical connection with their music. The application aims to enable users to discover new songs via tailored recommendations based on their chosen playlists or individual tracks. Additionally, users will have the opportunity to explore detailed analytics about their music, including aspects like energy, sentiment, and the underlying message of each song. Unlike traditional music recommendation systems that rely heavily on human-generated tags and extensive user listening data, our approach centers on leveraging the lyrics of songs. This method will allow us to recommend tracks with similar lyrical themes to those selected by the user, offering a more personalized and meaningful listening experience.

The need for our application comes from the absence of such a tool to discover music that mirrors their current emotions or life situations. To address the pain point of the traditional process of manually researching new artists, our application offers an efficient, streamlined process that can connect to your Spotify account and search for you. By using our lyrics-based recommendations instead of Spotify's traditional tag-based recommendations, users will be able to connect with music that echoes their personal stories and feelings, fostering a deeper emotional engagement with art.

We plan to use the MillionSongDataset alongside musiXmatch for lyrics to ensure we have a diverse array of songs as training data for our text-mining operations. Some of the operations we are looking into include TF-IDF weighting, sentiment analysis, topic modeling, and clustering. Once we have our recommendation algorithm, we will design and implement a user-friendly front-end interface using React. The application will allow users to connect to their Spotify music library via the Spotify API to input songs. Once songs are selected, they will be able to run the algorithm, and features such as sentiment, message, and energy of their selected songs and recommended songs will be displayed.

Our group will demonstrate the usefulness of our application by collecting user feedback throughout the design and development process. After the application is completed, we will assess the satisfaction of our product via a survey sent to potential users. Additionally, we can compare the results of our model's recommendations as opposed to other recommendation systems such as Spotify's.

The first milestone would be to build a working song recommendation model based on text mining techniques, which is anticipated to be completed and tested within the next two weeks. Afterward, we will focus on connecting that model with our front-end platform the week after. Finally, we will spend the last two weeks displaying the additional data features about each song based on its lyrics as well as the Spotify music library integration.

All group members will work on scraping lyrics and building the lyric-driven song recommendation model. Eric will work on setting up the skeleton of the app as well as Spotify API interactions. Andrea will work on the front end as well as the write-ups for the project. Angela will work on handling the lyric data and experimenting with how to create the most accurate song recommendation system.