Sardar Patel Institute of Technology

Department of Computer Engineering
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Title: Music Genre Detection, Sharing & Recommendation System

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Abstract

We have decided to create music genre detection, sharing and detection website allowing users to identify genre of a wav. file, get songs recommended to them acc. to their chosen song and chat with people having similar taste in music. Using an ML model, we process the file and predict its genre and recommend similar songs based on their chosen song. Using socket.io we implement the chatroom. Our goal is to create a user friendly environment for music enthusiasts to collaborate and further enrich their music experience.

Introduction

Many a times, we like a song but are unable to find/tell it's genre. This can be quite important if you want to listen to similar songs and enrich your music experience thus we felt the need to provide with genre detection for music as well as recommend similar songs. Additionally we have implemented a chatroom feature to help users interact with each other based on their liking and share their thoughts and personal recommendations.

Objective(s)

Develop an online music genre detection, sharing and recommendation system for enhanced music experience.

Problem Definition

Addressing the Complexity of Music Genre Identification and Recommendation and Enhancing overall User Experience.
Provide a chatroom feature for likeminded users to interact and share their personal favorites with each other.

Contribution

We have been able to successfully implement the detection and recommendation system which determines the genre of the .wav file and recommend songs based on their selection. Further we have been able to implement the chatroom feature too.

Design

We have a landing page wherein you have the options of detecting the genre by uploading a wav file yourself, get recommended similar songs by selecting one from our sizable database or chat with people by selecting one of your favorite genres and share your thoughts on the music scene. The detection and recommendation is done by their respective ML models trained on relevant datasets and the chatroom feature uses socket.io.

Methodology/Algorithms

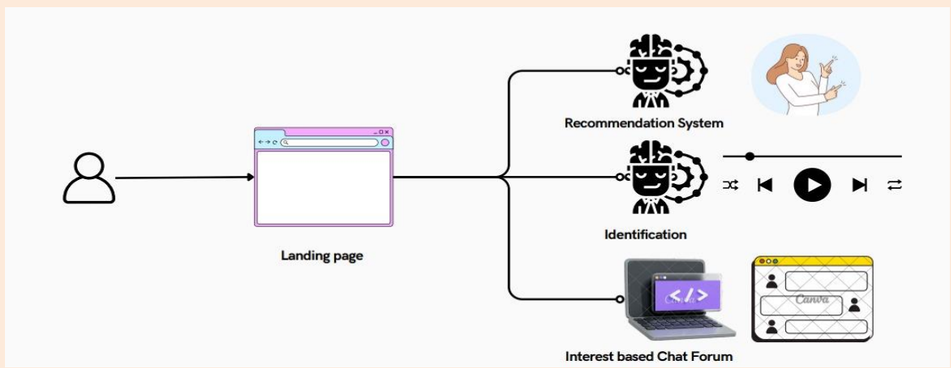
We have used KNN(k-nearest neighbour) and other vectors also cosine similarity to map the similar words in lyrics and train the model thereby helping in determining the genre and similar songs recommendation in the ML part. Using socket.io we have implemented the chatroom allowing users with similar taste to chat with each other. Finally, a landing page as UI to represent these functionalities.

Results

We have been able to get a decent accuracy (72 on detection) on both models namely the detection and recommendation ones. Similarly, we have been able to implement the chat feature.

Conclusion

In conclusion, we can say that we have successfully addressed the problem statement and tackled the objectives of giving music lovers help in identifying the genre and recommending songs based on their choice. Furthermore the chat feature provides users the opportunity to interact with friends who have similar liking in music. We have observed that the accuracy of these predictions have come to be around 72%. The chat feature allows users to select a genre of their liking and join the chatroom of the genre and chat with other users who have an interest in that genre. We have used Spotify API for recommendation system hosted vis streamlit. Similarly, the detection system has been deployed on gradio. A different landing page has been created for the chat feature.



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