A Mini Project Report on

Music Genre Classification

Submitted in partial fulfillment of the requirements
for the award of the degree of

Bachelor of Engineering

in

Computer Engineering

by

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Approval Sheet

This Mini Project Report entitled ***"Music Genre Classifier"*** Submitted by ***"Avishkar Dalvi" (20202002), "Kanchi Patil" (19102013), "Riddhi Narkar" (19102003), "Varshil Shah" (20202006)*** is approved for the partial fulfillment of the requirement for the award of the degree of ***Bachelor of Engineering*** in ***Computer Engineering*** from ***University of Mumbai***.

Prof. Ramya RB
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Head Department of Computer Engineering

Place: A.P.Shah Institute of Technology, Thane
Date:

CERTIFICATE

This is to certify that the mini project entitled ***"Music Genre Classifier"*** submitted by ***"Avishkar Dalvi" (20202002), "Kanchi Patil" (19102013), "Riddhi Narkar" (19102003), "Varshil Shah" (20202006)*** for the partial fulfillment of the requirement for award of a degree ***Bachelor of Engineering*** in ***Computer Enginering***, to the University of Mumbai,is a bonafide work carried out during academic year 2021-2022.

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DECLARATION

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that We have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

ABSTRACT

The main aim of this project would be building an AI which can classify the genre of some music. To classify the genre, we would be training the model by preprocessing the spectrograms of different music genres. The model would be then accompanied by a website, which will accept .wav files as an input, and after running it into our model, classify the genre of the song. A lot of people either love listening to songs from a specific genre, or like to explore and listen to new ones they haven't discovered before. This model can help people classify their music and enjoy music to greater extent. A music classifier can help to keep track of similar songs together for better accessibility of the user.

INTRODUCTION

Music has been an ancient art form and also is a form of expression of self, and as humanity evolved, it has undergone major changes too. Today, we have thousands of music genres originating from all over the world and enjoyed by young and old alike. Over time, majorly after Renaissance, music started to get a lot different. Slowly and slowly, we began to find and create new genres. We also tried to mix two genres into one to give the best of the both worlds. Today, we have more than a thousand different music genres, and the number is increasing!

Music has affected many of our lives, right from helping a baby sleep, to helping reliving old memories. Research have also linked music to de-stressing activity. A lot of people feel that the taste of their music says a lot about their personalities. In a world where good music means so much to us, a lot of us own the labels we love and have found out our music tastes. Keeping one's collection of music organized and being aware of the genres we love and like to listen to is generating more importance to the genres of music.

It really matters to the user what and which music he or she is listening to. Hence, many established music player and music streaming platforms with many sophisticated features have a genre classifier on their system.

A genre classifier can classify a song or some music to a genre. A lot of platforms often use these to classify and bifurcate songs into different genre type or genre specific playlist. Processing such a huge data manually would take years, but AI helps here. An ML model can very easily classify a song's genre and then it could be then added to the specific playlist. Such a system helps users listen to songs from their favourite genres without much effort. They can also explore new music without much hassle.

PROBLEM STATEMENT

Users, nowadays are really particular about their music taste and the genres they like to listen to. Often, loose definitions of music genres, and not knowing the exact description of some genres often confuse users with regards to which genre the song actually belongs to.

A music genre classifier helps to classify a song with respect to its genre. In this project, we would be build a ML model which can classify music genre for a given .wav file.

SOFTWARE REQUIREMENT

1) Google Collab
2) Python
3) Librosa
4) Matplotlib
5) Sklearn
6) Pandas
7) Numpy

HARDWARE REQUIREMENT

1) i5 / i7/ amd rysen 3 or 5
2) 8 GB ram
3) 256 GB ssd

RESEARCH PAPERS

[1] “Roberto Basili, Alfredo Serafini, Armando Stellato, University of Rome Tor Vergata, Department of Computer Science, Systems and Production, ‘CLASSIFICATION OF MUSICAL GENRE: A MACHINE LEARNING APPROACH’, 00133 Roma (Italy)”

[2] Tzanetakis, G. Cook, P. “Musical genre classification of audio signals.”, IEEE Transactions on Speech and Audio Processing, 10(5)

[3] “Hareesh Bahuleyan, University of Waterloo, ON, Canada, “Music Genre Classification using Machine Learning Techniques”, 17th International Society for Music Information Retrieval Conference (ISMIR), New York”

[4] “George Tzanetakis and Perry Coo, “Musical genre classification of audio signals”, IEEE Transactions on speech and audio processing 2002”