MES COLLEGE OF ENGINEERING-KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA246 - MAIN PROJECT

PRO FORMA FOR THE APPROVAL OF THE FINAL SEMESTER PROJECT

(Note: All entries of the pro forma of approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Project Proposal Number : _____
(Filled by the Department)

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Academic Year : 2023
Year of Admission : 2021
Admission Number : 16618
Roll Number : 21MCA11003
Register Number : MES21MCA2003

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3. Address of the Organization : KUMBIDI-THRIKKANAPURAM RD, KUTTIPPURAM, KERALA 679
   Telephone No. : _____ Company E-Mail : _____
4. Name of the External Guide : _____
   Mobile No. : _____ E-Mail : _____
5. Title of the Project : Machine Learning Based Teaching Assistant For Carnatic Music learning
6. Name of the Guide : Mr. Balachandran K P

Date : 10.02.2023 Signature of the Student :

Comments of The Project Guide

Initial Submission :
Approval Status : Approved / Not Approved Dated Signature of Guide 10/2 HOD
First Review :

Second Review :

Comments of The Project Coordinator

Initial Submission: Approved

First Review

Second Review
Coordinator

Dated Signature of Project Co-ordinator

ML BASED TEACHING ASSISTANT FOR CARNATIC MUSIC LEARNING

AKHILRAJ CHIRAYIL
MES21MCA-2003

ABSTRACT

India is blessed with different realms of music. Carnatic music is one of the popular genres of music in south India. In this, Raga are the most important aspects of music also known as the pillars of the music and plays vital role in mood creation. Raga is a melody which is created by combination of notes or Swaras. In real time, it is very difficult for beginners to study and identify the raga from the music without proper training. Therefore, this project develops a concept that identify and extract basic notes the ragas from rendered voice of an individual.

The objective of this project is to help the students through checking the rendered notes for correctness there by support their individual practice and identifying the ragas from a set of input music data. Therefore, this project is very useful for the people who is interested in the field the Carnatic music. It works through the comparison of identifying frequency component of data signal from the input data to the trained data. The frequency data signal is extracted from the Input Carnatic music.

The proposed system is a new invention as there is no such existing system available. Ragas is composed of different combinations of notes or Swaras. From this combination of Swaras (Raga), the system is trained to produce Ragas from the input data given. Machine learning technology is used to implement this project using Python. Frequency range of notes can be compared through python and evaluate the correctness of rendered voice.

The database required for this will be created in the first phase of the project. Data is collected by using recording instruments, and collected data are cleaned to remove unwanted noise. Then the system will be trained using the cleaned data. After training the system it is ready to check the ragas from the input data given and output is generated. The input data is collected by using pre-recorded data , by using live recording, from the instruments like Veena, Harmonium, Keyboard and vocal notes from human. The collected data either from of human voice or musical instruments. The reference points for calibration of data are measured using a sound level meter to get the correct sound and used for training.

By using this project, the learning and study process of Carnatic music is become more convenient for beginners and the hardness will be reduced. Also, the identification of ragas will become easier.

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Balachandran. KP
Guide