CLASSIFIERS ON VARIOUS FEATURES FOR AUTO MUSIC TRANSCRIPTION 2016

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ABSTRACT

The Objective of this work is to evaluate the accuracy of auto-transcription by extracting features from the audio music and apply different classifiers on it to get the note. We are aimed at transcription on certain types of music instruments, for example strings. Only the main instrument of the polyphonic music will be transcribed.

1. INTRODUCTION

The Dataset of this work will collected. The requirement of the dataset should contain certain types of instrument like string and it should come with the corresponding music scores which we can used as labels for training and testing. The collected dataset will be reconstructed to pieces which contain the same number of notes in order for easier evaluation.
Then MFCC , STFT , Auto-correlation etc. would be used to extract acoustic features.
The extracted features will be used as the input to the classifiers for note transcription. Several different classifier will be involved in this stage in order to compare their performance in terms of accuracy. The features will be used individually as well as combatively. So we will have different combination of features and classifiers.
The accuracy test will perform on each combinations and a compare over them will be provided at the evaluation section.
Python will be the main programming language for this work. Marsyas will the library used for Acoustic features extraction while Scipy will be used for the data mining classifier.

2. OVERVIEW

The overview diagram is as Figure 1. The classifiers are trained by the train dataset.

2.1 Timeline

We make 4 milestone for the whole project, for each task there will be two responsible team member for it, one as primary while the other as secondary. Please find the detail of the milestone in Table 1

MileStones	Deadline	Tasks	Primary	Secondary
MileStone1	March 6	Dataset Features Classifier	Aasim Parul Nora	Nora Nora Aasim
MileStone2	March 13	Train	TBD	TBD
MileStone3	March27	Testing	TBD	TBD
MileStone4	March30	Report	TBD	TBD

Table 1. Milestones

2.2 Role of team member

Nora: Architecture design, team management, coding
Aasim:
Parul:

3. DATASET

The Dataset we used for this work is collected on line. And we will organize it in the structure as we need.

4. ACOUSTIC FEATURES FOR TRAINING

MFCC, STFT, Auto-corr, etc

5. CLASSIFIERS

SVM etc.

6. RESULT

Accuracy will be the matrix for the measurement.

7. CONCLUSION

Basic on the result we should be able to figure out which combination is best for auto music transcription objective.

8. REFERENCES