

TRAIN-TEST-TASKS AND AUDIO SIMILARITY - MIREX 2009

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ABSTRACT

The paper describes our submission to both the MIREX 2009 Train-Test tasks and audio similarity task.

The algorithm is presented and the task results are discussed.

1 ALGORITHM DESCRIPTION

The submissions to Train-Test task set and audio similarity both use the same feature extraction algorithm. For the classification tasks we added a simple WEKA SMO classification to our feature extractor engine. Timbral features and beat onsets are incorporated.

The algorithm is written with the specific goal to perform very fast.

1.1 Dependencies

The algorithm is implemented in C++ and uses several external libraries. For MIREX submission everything has been installed on the server to be ready-to-use.

2 RESULTS

2.1 Train-Test

The following table shows the evaluation numbers of the audio genre classification (mixed set) which are published on the MIREX 2009 wiki¹. Our entry is marked with ANO. Please refer to the website for an explanation of the accuracy.

¹ [http://www.music-ir.org/mirex/2009/index.php/Audio_Genre_Classification_\(Mixed_Set\)_Results](http://www.music-ir.org/mirex/2009/index.php/Audio_Genre_Classification_(Mixed_Set)_Results)

Participant	Mean Accuracy	Mean Discounted Accuracy
ANO	60.50%	70.60%
BP1	70.63%	77.61%
BP2	68.51%	76.21%
CL1	73.23%	80.48%
CL2	73.33%	80.61%
GLR1	71.23%	78.51%
GLR2	60.14%	69.11%
GP	64.24%	72.97%
GT1	65.10%	73.68%
GT2	67.87%	76.21%
HNOS1	64.47%	72.96%
HNOS2	20.90%	23.22%
HNOS3	64.34%	72.97%
HNOS4	45.16%	55.09%
HW1	65.99%	74.33%
HW2	65.31%	73.68%
LZG	68.29%	76.29%
MTG1	64.79%	73.05%
MTG3	64.06%	71.95%
MTG4	64.00%	71.69%
MTG5	70.44%	77.69%
RCJ1	32.50%	44.08%
RCJ3	37.71%	49.46%
RCJ4	50.99%	61.2%
RK1	61.41%	70.20%
SS	66.60%	74.54%
TTOS	67.89%	76.47%
VA1	68.84%	76.53%
VA2	67.39%	75.56%
XLZZG	68.93%	76.54%
XZZ	69.36%	77.25%

The performance of our algorithm is in the lower half of the field. This may be due to the fact that we did not specifically train it for the classification task.

2.2 Audio Similarity

The following table shows the average FINE scores of the audio similarity task (taken from MIREX 2009 website)

Participant	Average FINE Score
PS2	6.46
PS1	5.75
BSWH2	5.73
LR	5.47
CL2	5.39
ANO	5.39
GT	5.34
BSWH1	5.14
SH1	5.04
SH2	4.93
BF2	2.59
ME2	2.58
CL1	2.53
BF1	2.4
ME1	2.33

Apart from an obvious winner (PS2), our algorithm is quite in the middle of the field.

2.3 Runtime

Measured runtimes for the audio similarity task indicate that our algorithm performs fastest, e.g., ten times faster than the winner algorithm PS2.