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1 import numpy as np
2 import librosa
3 import os
4 import csv
5
6 # Source: https://medium.com/@sdoshi579/classification-of-music-into-different-genres-
  using-keras-82ab5339efe0
7
8 header = 'filename chroma_stft rmse spectral_centroid spectral_bandwidth rolloff
  zero_crossing_rate'
9
10 for i in range(1, 21):
11     header += f' mfcc{i}'
12
13 header += ' label'
14 header = header.split()
15
16 file = open('GTZAN Genre Classification\GTZAN Dataset\data.csv', 'w', newline='')
17 with file:
18     writer = csv.writer(file)
19     writer.writerow(header)
20
21 genres = 'blues classical country disco hiphop jazz metal pop reggae rock'.split()
22
23 for g in genres:
24     for filename in os.listdir(f'./GTZAN Genre Classification/GTZAN Dataset/{g}'):
25
26         songname = f'./GTZAN Genre Classification/GTZAN Dataset/{g}/{filename}'
27         y, sr = librosa.load(songname, mono=True, duration=30)
28
29         # Features:
30         chroma_stft = librosa.feature.chroma_stft(y=y, sr=sr)
31         rmse = librosa.feature.rms(y=y)[0]
32         spec_cent = librosa.feature.spectral_centroid(y=y, sr=sr)
33         spec_bw = librosa.feature.spectral_bandwidth(y=y, sr=sr)
34         rolloff = librosa.feature.spectral_rolloff(y=y, sr=sr)
35         zcr = librosa.feature.zero_crossing_rate(y)
36         mfcc = librosa.feature.mfcc(y=y, sr=sr)
37
38         to_append = f'{filename} {np.mean(chroma_stft)} {np.mean(rmse)}
  {np.mean(spec_cent)} {np.mean(spec_bw)} {np.mean(rolloff)} {np.mean(zcr)}'
39         for e in mfcc:
40             to_append += f' {np.mean(e)}'
41         to_append += f' {g}'
42
43         file = open('GTZAN Genre Classification\GTZAN Dataset\data.csv', 'a',
  newline='')
44         with file:
45             writer = csv.writer(file)
46             writer.writerow(to_append.split())
47
  ..

```