

## Data used: GTZAN Dataset - Music Genre Classification

Librosa and Essentia:

- Tempo
- Energy
- Loudness
- Danceability
- Loudness (Essentia)

	energy	loudness_librosa	danceability	loudness_essentia	
count	999.000000	999.000000	999.000000	999.000000	
mean	0.130826	-55.592362	1.345035	0.874498	
std	0.065671	7.905616	0.375967	0.194330	
min	0.005270	-75.975586	0.692178	0.002467	
25%	0.086566	-61.561386	1.084862	0.885666	
50%	0.122181	-54.447525	1.296022	0.952602	
75%	0.175621	-49.416441	1.533512	0.972000	
max	0.397734	-35.390053	3.923712	0.988212	

  

	danceability	energy	loudness	speechiness	acousticness	instrumentalness	liveness	valence	tempo	
count	114000.000000	114000.000000	114000.000000	114000.000000	114000.000000	114000.000000	114000.000000	114000.000000	114000.000000	
mean	0.566800	0.641383	-8.258960	0.084652	0.314910	0.156050	0.213553	0.474068	122.147837	
std	0.173542	0.251529	5.029337	0.105732	0.332523	0.309555	0.190378	0.259261	29.978197	
min	0.000000	0.000000	-49.531000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
25%	0.456000	0.472000	-10.013000	0.035900	0.016900	0.000000	0.098000	0.260000	99.218750	
50%	0.580000	0.685000	-7.004000	0.048900	0.169000	0.000042	0.132000	0.464000	122.017000	
75%	0.695000	0.854000	-5.003000	0.084500	0.598000	0.049000	0.273000	0.683000	140.071000	
max	0.985000	1.000000	4.532000	0.965000	0.996000	1.000000	1.000000	0.995000	243.372000	

Further Investigation for variable:

- Acousticness
- Instrumentalness
- Liveness
- Speechiness
- Valence

1. Approximation from libraries
2. Using available Dataset to train model to predict above variables:
  - a. Data Used: **Spotify Tracks Dataset**
    - i. Acousticness
      1. Root Mean Squared Error on test data: 0.68
      2. Root Mean Squared Error on training data: 0.67
    - ii. Instrumentalness
      1. Root Mean Squared Error on test data: 0.87
      2. Root Mean Squared Error on training data: 0.87
    - iii. Liveness
      1. Root Mean Squared Error on test data: 0.97
      2. Root Mean Squared Error on training data: 0.96
    - iv. Speechiness
      1. Root Mean Squared Error on test data: 0.97

- 2. Root Mean Squared Error on training data: 0.98
- v. Valence
  - 1. Root Mean Squared Error on test data: 0.85
  - 2. Root Mean Squared Error on training data: 0.86