

A musical snapshot: What does popular music sound like?

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BACKGROUND

Classification of music by genre is a highly speculative process. Little is known about the objective musical features of various genres, yet this system is widely used by industry experts to classify music.

OBJECTIVE

We aimed to establish alternate methods to classify music into genre based on objective tools, namely, the Essentia library. By doing this, we hoped to gain an understanding of the relationship between listeners and music preference



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METHOD

Search Spotify
profile playlists

N = 1395

Term: top, hot, hits,
best, year, essentials

and

Genre: rock, pop,
country, jazz,
classical, club,
dance, metal

n = 25

Search playlist
tracks

Tracks = 1400

Spotify id
Artist name
Track name
Popularity
Rank in list
List name

Essentia audio
analysis

Tracks = 983

Pretrained models:
MusiCNN
VGG

Training data:
Million Song Dataset
(MSD)
MagnaTagATune
Dataset (MTT)

Low-level features: key, scale,
note onsets, dynamic complexity

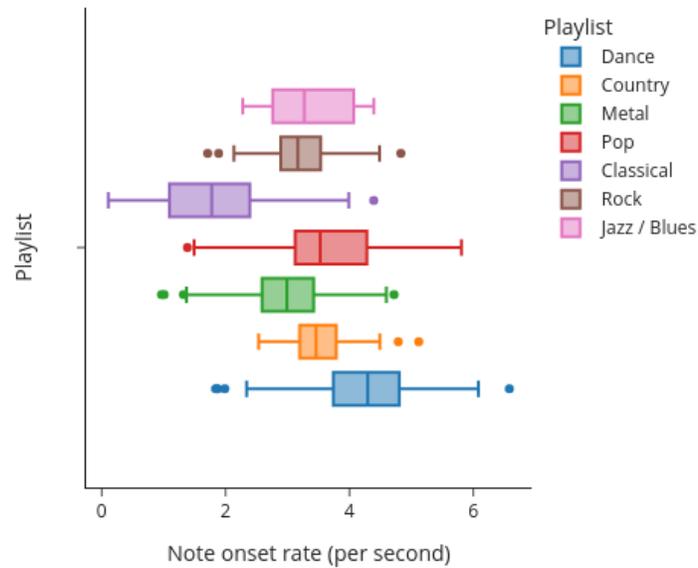
Genre³: blues, classic, country,
disco, hip hop, jazz, metal, pop,
reggae, rock

Autotagging¹: male/female
vocalists, dance, beautiful, chillout,
Mellow, 60/70/80/90/00,
instrumental, ambient, acoustic,
experimental, guitar, sexy, catchy

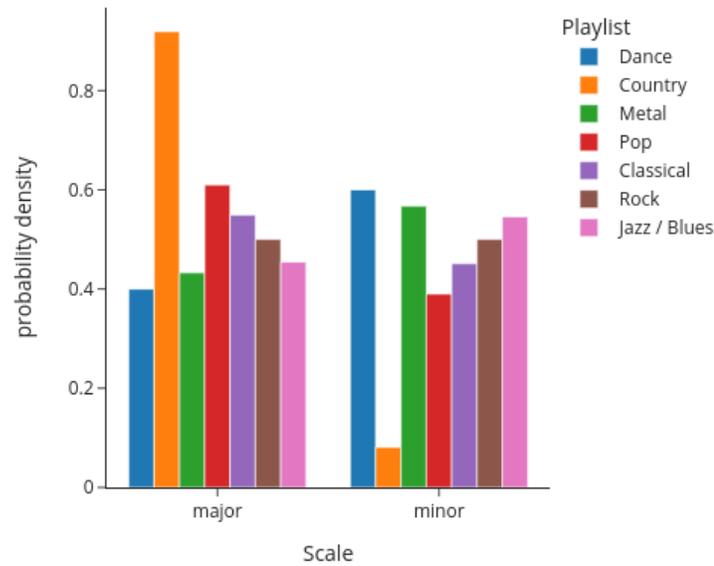
Mood²: aggressive, relaxed,
happy, sad, party

RESULTS

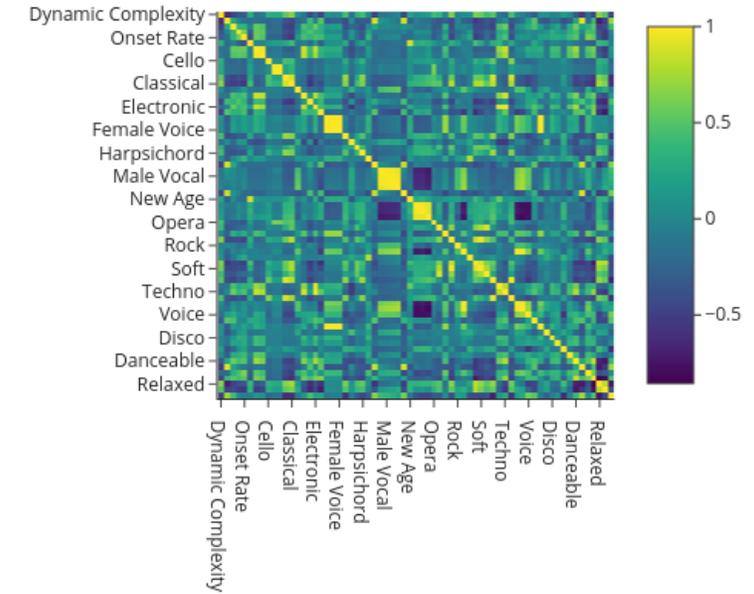
Boxplot of feature note onsets



Proportion of scale by playlist



Heatmap of MusiCNN (MTT) features



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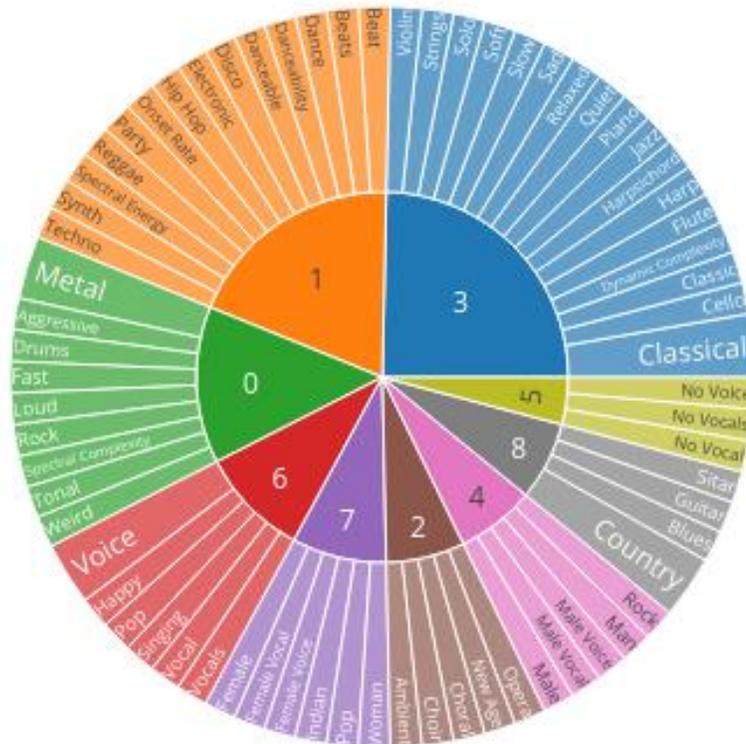
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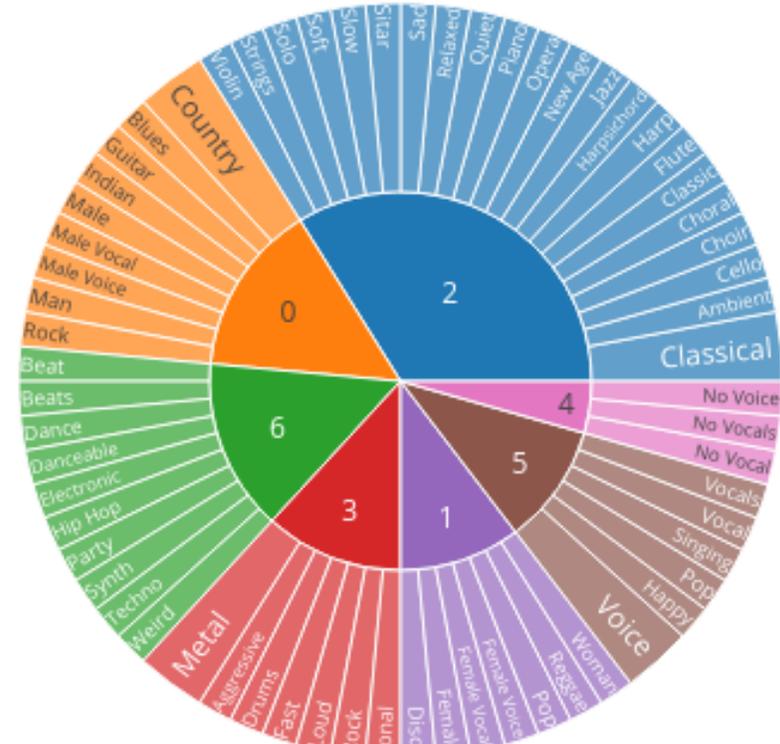
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RESULTS

Hierarchy of feature groups (MusiCNN - MTT)



Hierarchy of feature groups (VGG - MTT)





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DISCUSSION

Although these analyses are preliminary, we are beginning to identify objective similarities and differences between musical tracks, such as common keys, instrumentation, and note onset rates. Our next step is to generate stimuli based on these characteristics and to validate them with participant feedback. These stimuli will be used in our study to investigate the relative effect of music acoustic features compared to genre on listeners' music preference.

IMPLICATIONS

The procedure used here, to establish objective features in music that can be systematically manipulated, can improve future research in music cognition, perception, and listening behaviour. Such carefully crafted stimuli will allow researchers to better understand the nuanced effects that music plays in a wide variety of experiments.

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