Capstone I Proposal - Pedro Meyer

Background & Motivation

I have been a musician for about 17 years. As a songwriter, it is interesting to me to understand what makes songs successful, unique and enjoyable. There are many parameters that makes a song sound the way it sounds and they are now widely available for researches to look into.

I would like to understand the relationship between these parameters, called acoustic metadata, with our emotions, and how successful songs manipulated those parameters.

This project aims to establish a relationship between the acoustic metadata to the way people feel, and how that relates to popular tunes through the decades, form the 60's to the 2000's.

Data

Harvard has made available the data for a study conducted by Tuomas Eerola in 2016 that aimed to correlate the metadata with emotions. This study can be found here

In order to correlate the significance of emotions and popular music, I have collected data from the Billboard charts, summarizing the top 20 songs on their top 100 charts per decade, from the 60's to the 2000's. The metadata for each track is now made available by Spotify

Exploratory Data Analysis

The `data/Top20AllDecades.csv` contain a wide range of information about each track: artists' name, song's name, rank on the billboard top 20, as well as the metadata related to it. There is an explanation of what each metadata parameter means here. In addition to that, the `data/dataverse_files/mean_emotion_ratings` as well as the `data/dataverse_files/design_matrix` are used to correlate emotions to the metadata themselves. Emotions like "happy", "sad", "peaceful" and "scary" are compared to ratings of parameters such as "Register", "Mode", "Tempo", and others.

Flow

1) Explaination of metadata parameters 2) Relationship between metadata and emotions 3) Exploration of billboard top 20 songs and their metadata 4) Average each decades metadata values and infer on the "mood" of that decade.

Hypothesis

Music is emotion and also storytelling. If songs can make us feel things, and we can break down songs by its acoustic metadata, then: 1) Can we draw conclusions about the "mood" of each decade based on the average value of each decade's top 20 metadata? 2) If anything, can we find a trend on music consumption based on those parameters?