



# Music by feature

An attempt to unearth what we love  
about the music we love

*by Andrew Way*



The Billboard logo is displayed in a bold, black, sans-serif font. Each letter of the word "billboard" contains a small, solid-colored circle. The colors of the circles, from left to right, are green, red, yellow, blue, and orange.

- Released in **2019**
- reaching the **Hot 100**
- in weeks ending **12 Jan 2019** to **28 Dec 2019**

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- **Metadata** features
    - **Categorical:** key, mode [major v minor]
    - **Quantitative:** number of artists, duration, tempo
    - **Qualitative:** acousticness, danceability, valence, etc.

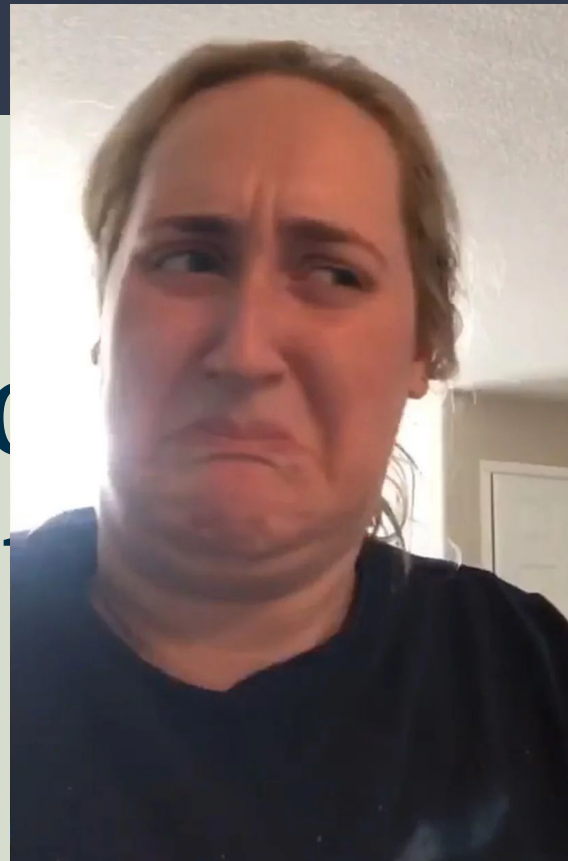
The question:

Can we predict the  
performance of a Hot 100  
track by analyzing its  
features?

The question:

Can we predict the  
performance of  
tracking in  
features?

**NO**



The question:

Can we predict the  
performance of a Ho  
track by analyzing i  
features? **WELL...**



# Models

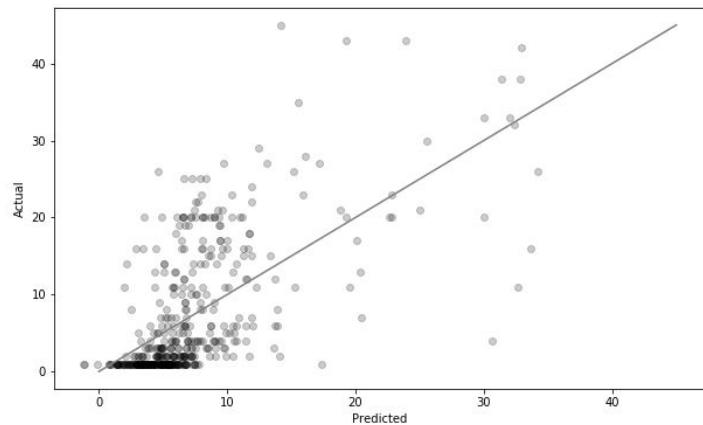
## OLS Regression

- $R^2 = .413$
- Adj  $R^2 = .398$
- RSME = 9.86
- MAE = 7.51

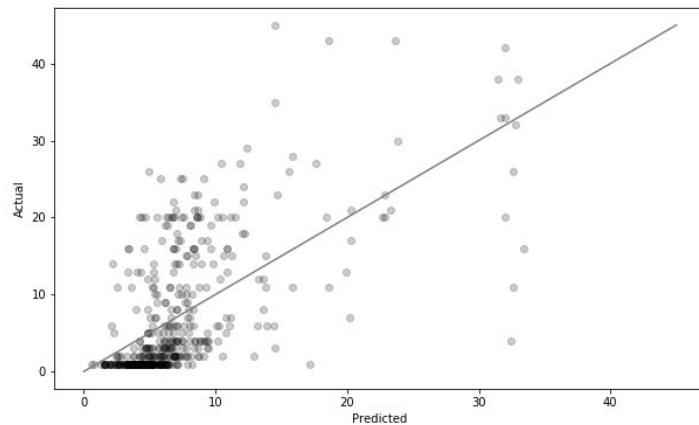
## LASSO Regression

- $R^2 = .398$
- Adj  $R^2 = .395$
- RSME = 9.80
- MAE = 7.45

**OLS**  
(11 features)



**LASSO**  
(2 features)



# Visualization



# Features

|                         |  |
|-------------------------|--|
| y = Weeks on chart      | Number of weeks on Hot 100   |
| Peak position           | Highest reached position on Hot 100  |
| Popularity              | Algorithmically derived value based on number of plays and recentness of plays |
| <del>Artist count</del> |  |
| <del>Duration</del>     |  |
| <del>Danceability</del> |  |
| <del>Energy</del>       |  |
| <del>Loudness</del>     |  |
| <del>Speechiness</del>  |  |
| <del>Acousticness</del> |  |
| <del>Valence</del>      |  |
| <del>Tempo</del>        |  |

# Billboard Hot 100 formula to include data from Spotify and Rdio

*The method used to calculate Billboard's Hot 100 Songs will be tweaked to include data from music streaming services Rdio and Spotify.*

By [Jeff Blagdon](#) | Mar 13, 2012, 11:59pm EDT

Source [WSJ](#)

# CONCLUSION

- Results do not indicate strong correlation between song features and chart performance, with the exception of popularity

To sell something **surprising**,  
make it **familiar**

To sell something **familiar**,  
make it **surprising**

based on the writings of  
**Raymond Loewy**

*thank you.*



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Q & A

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