

Metis Records

Predicting Hit Songs



Stream-Way to Heaven



\$12.2 Billion US Music revenues in 2020



\$10 Billion in streaming revenue



83 million US Spotify users



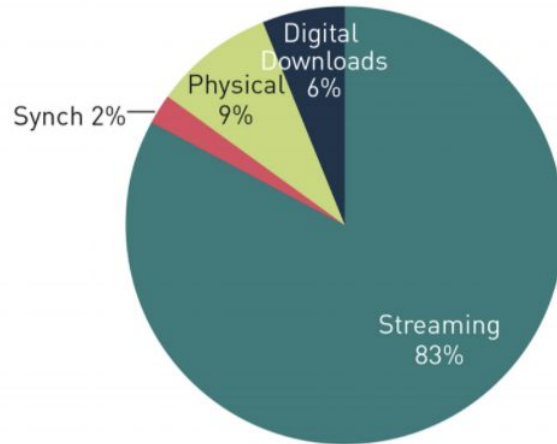
\$23 Million / Day for major US Record Labels



Top 100 songs worth **\$450 million** in revenue

U.S. MUSIC INDUSTRY REVENUES 2020

Source: RIAA



Goal : Create Song Ranking for Hit Identification

Process



41,000 Spotify Songs
with 15 music features
(1960 to 2019)



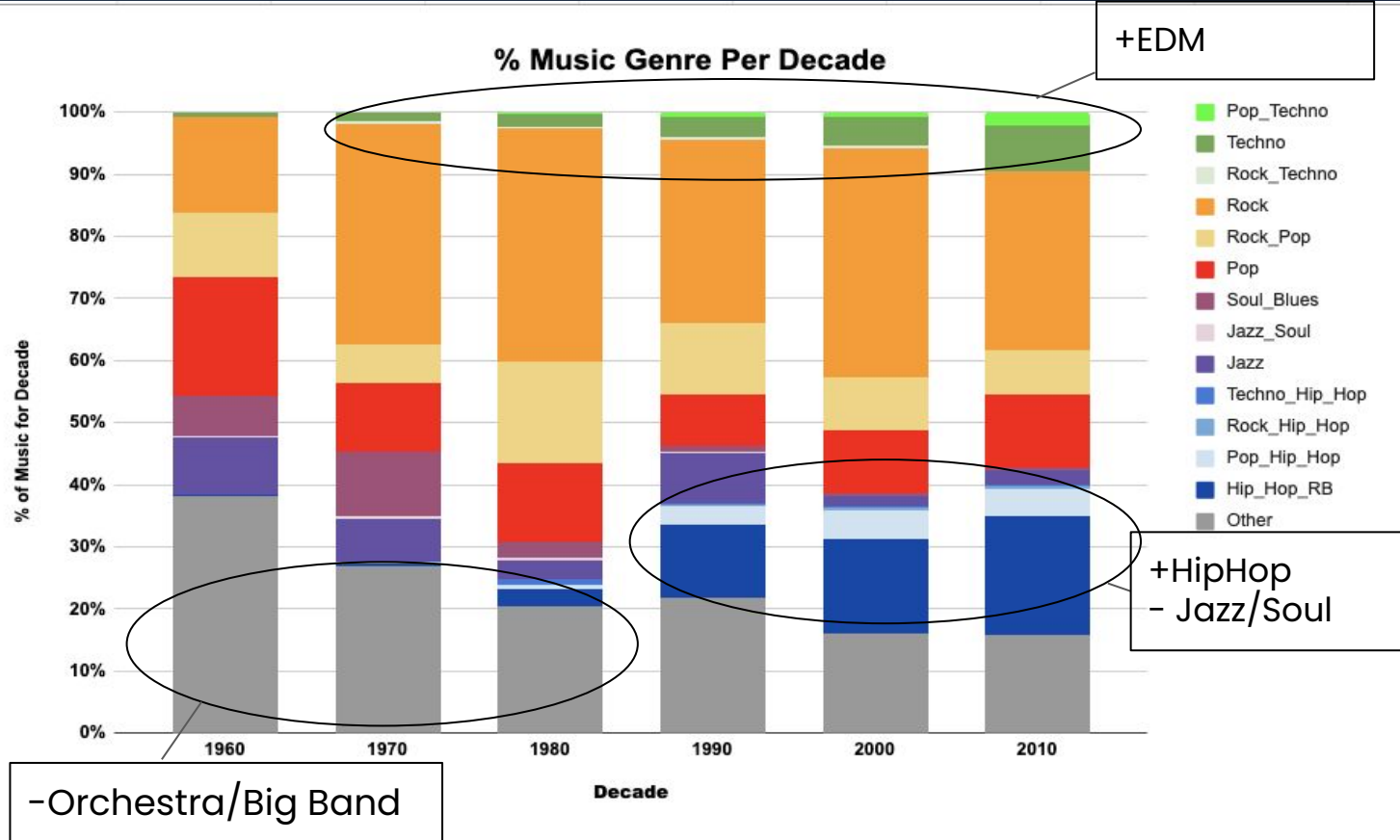
Define Songs "Flop"
or "Hit" if in Billboard
Top 100



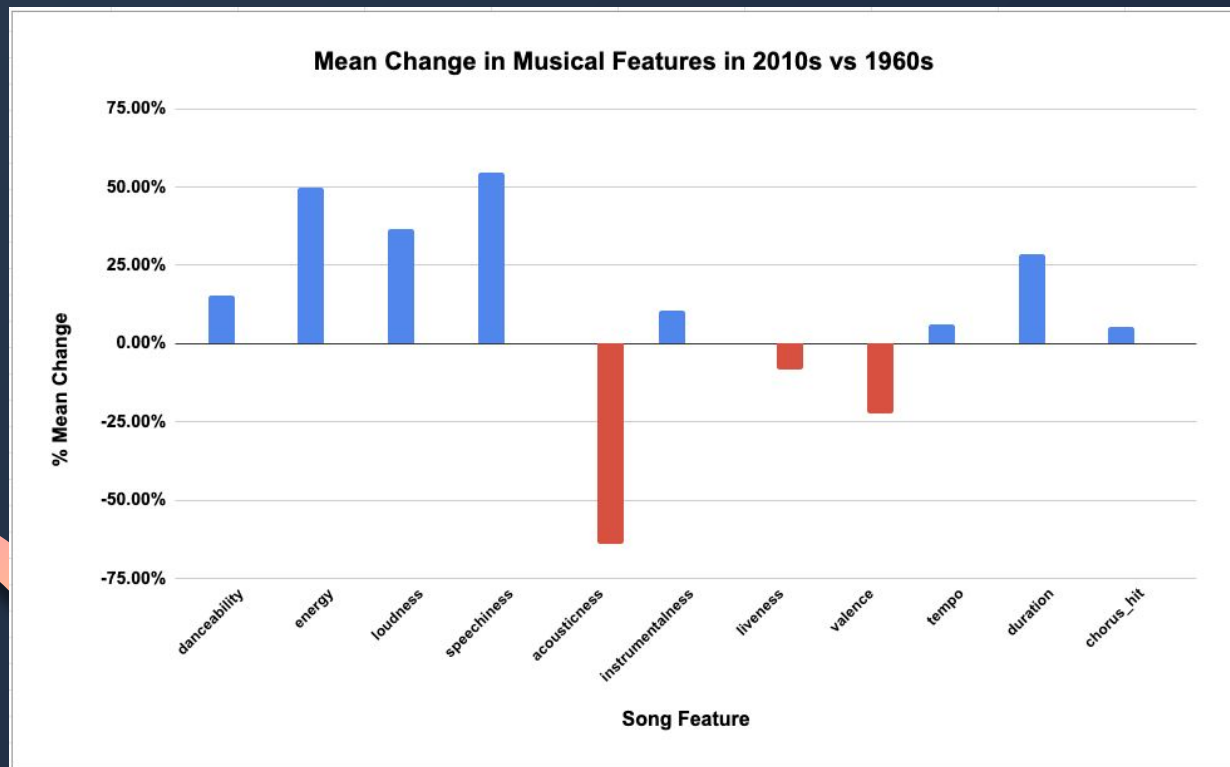
Feature Engineer
and find best
algorithm to
maximize AUC

Target : AUC ROC

Out With The Old, In With the New



Times They Are A Changin'

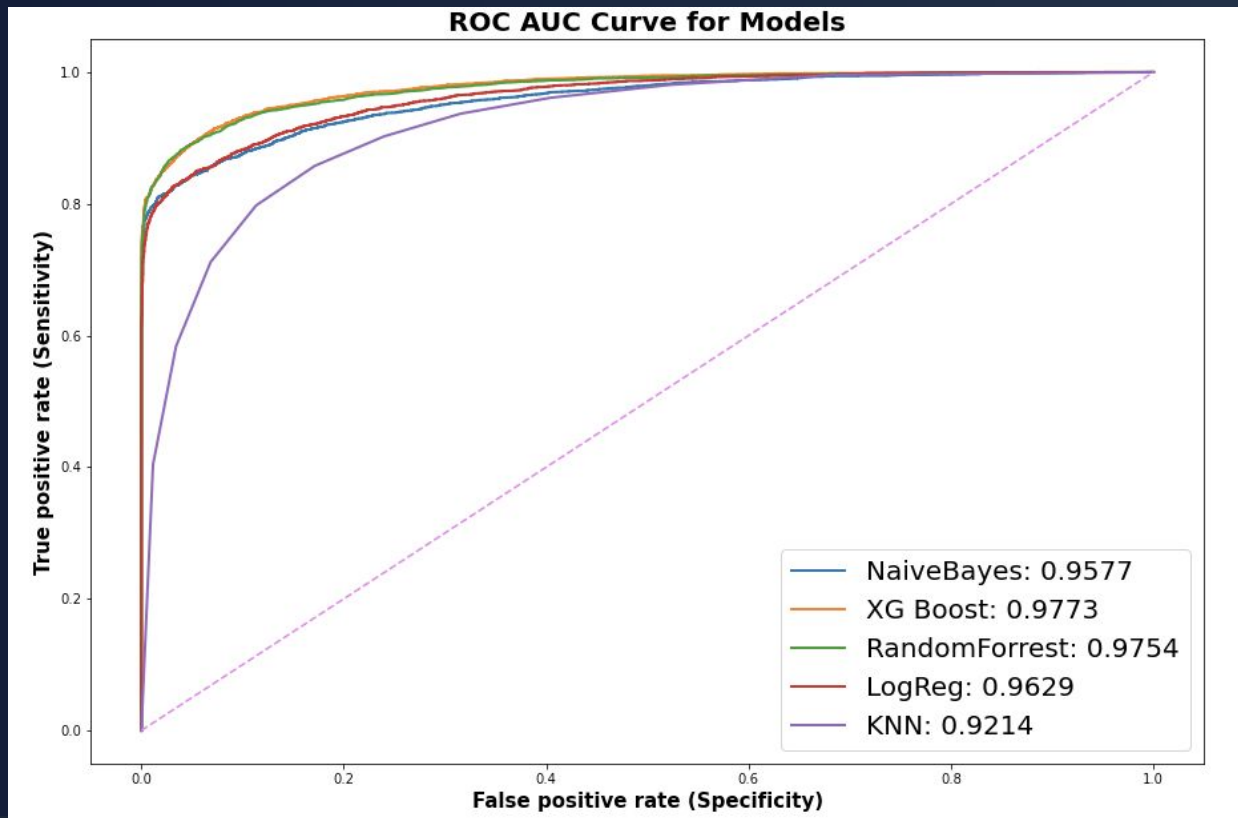


Modern Music

+Verbal
+Energetic
+Louder
+Longer
+Danceable

-Acoustic
-Live
-Happy

XG Boost: Best of the Rest



Final AUC Score: .9765

Hit Accuracy: .91

Feature Importance

- Previous Hits
- Genre
- Instrumentalness

Final Model Bias

Actual Flop

3922

197

Actual Hit

483

3620

Predicted Flop

Predicted Hit



“But how will this model
translate outside of this
dataset?”

—Someone Famous



Predicting the Billboard 100

-.03

Correlation

85

Predicted Hits

Predicting Success: To Pimp A Butterfly

.28

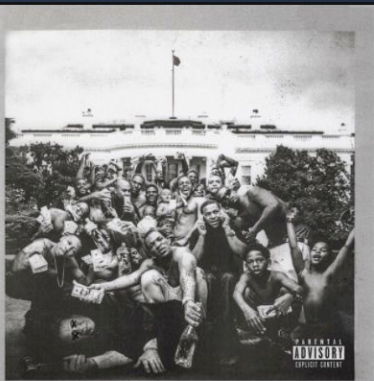
Correlation

9

Predicted Hits

3

Actual Hits





More Work to Do

Collect More songs

Artist with and without hits, include star flops

“Realistic” Target distribution

Focus in on recent decades for sales today

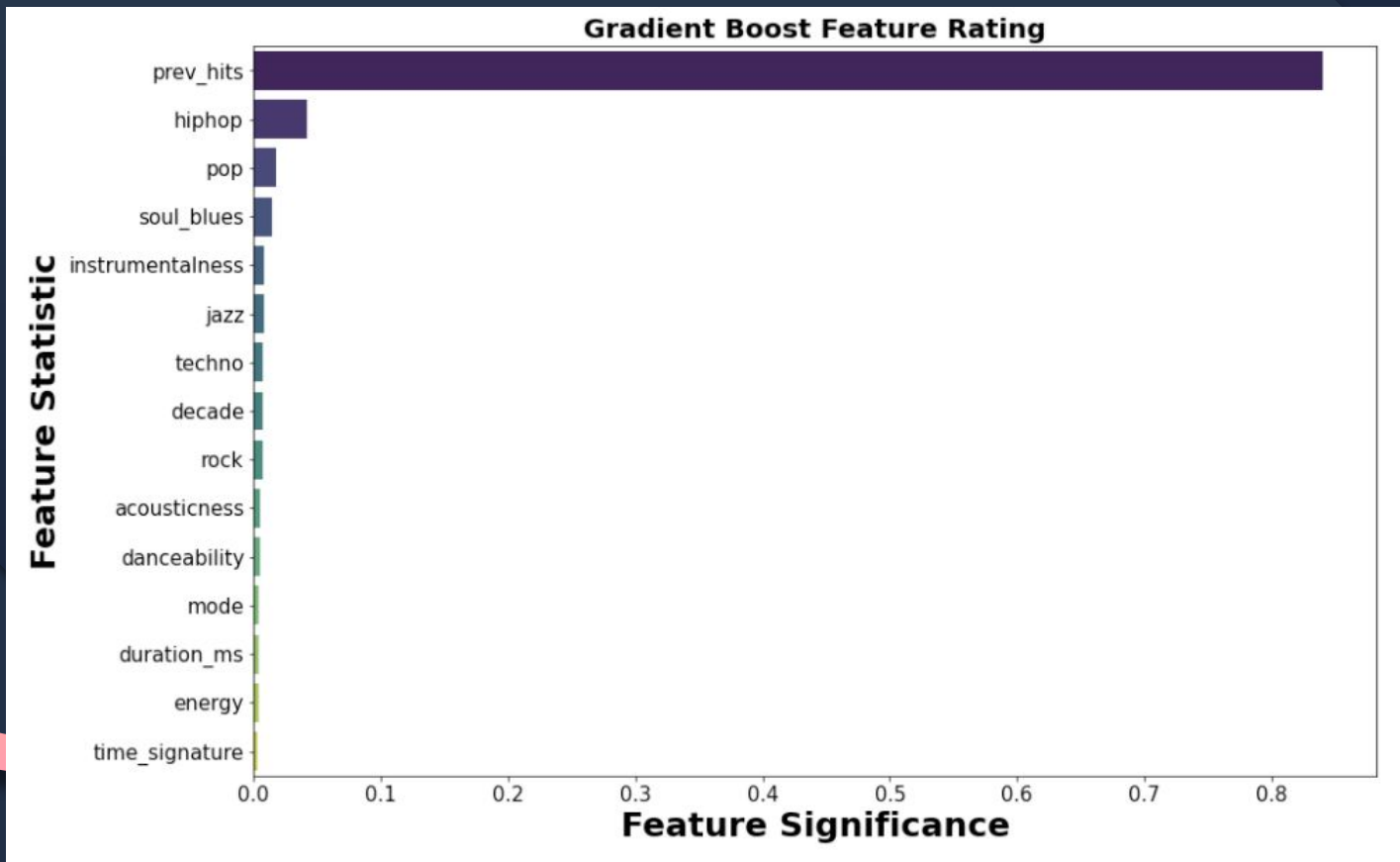
Total Streams



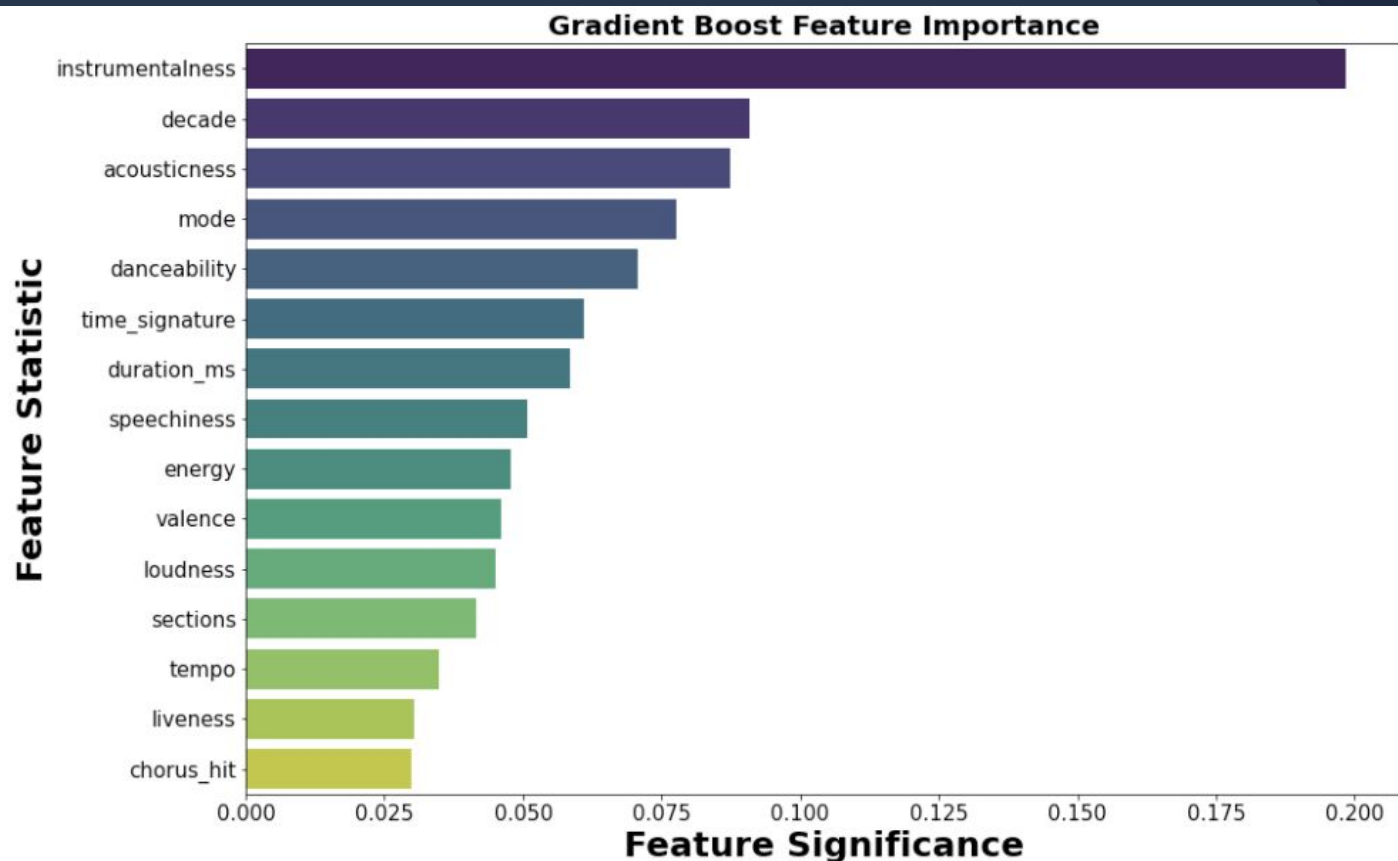
A photograph of a woman with long dark hair, wearing sunglasses and a white t-shirt with paint splatters. She has paint on her face and is smiling, with her right arm raised. In the background, other people are visible, some wearing flower crowns. The image has a teal overlay and is decorated with colorful geometric shapes: a pink circle in the top left, an orange circle in the middle left, a pink circle in the top right, and a yellow-to-pink gradient shape in the bottom right.

Questions

Post Feature Engineering



Pre Feature Engineering



Turn It Up

