Make discovering new artists easier

# SONG BIRD

# MUSIC INDUSTRY

- The social media explosion has brought about drastic changes in the world of arts
- Small artists showcase their art to targeted audiences and gain cult followings
- The music industry is seeing a surgency of Instagram famous artists putting out quality material that is entirely unique and original and mostly not your taste

# WHAT DOES THIS MEAN?

- Sifting through so many artists can be overwhelming
- Smartphone music libraries are filled with one or two songs from an eclectic mix of different artists and collaborations
- Discovering new artists has become a chore

# THE SITUATION

- You hear a song on the radio or in a restaurant or out shopping
- You SHAZAM the song to find the artist
- You've never heard of this artist
- You browse the artist page in Spotify/Apple/ETC.
- You listen to the top hits from the artist and it doesn't sound like the song you liked
- You listen to the album the song originated from
- You just spent a couple hours throughout your day listening to songs you don't like in the car

# WHAT CAN WE DO?

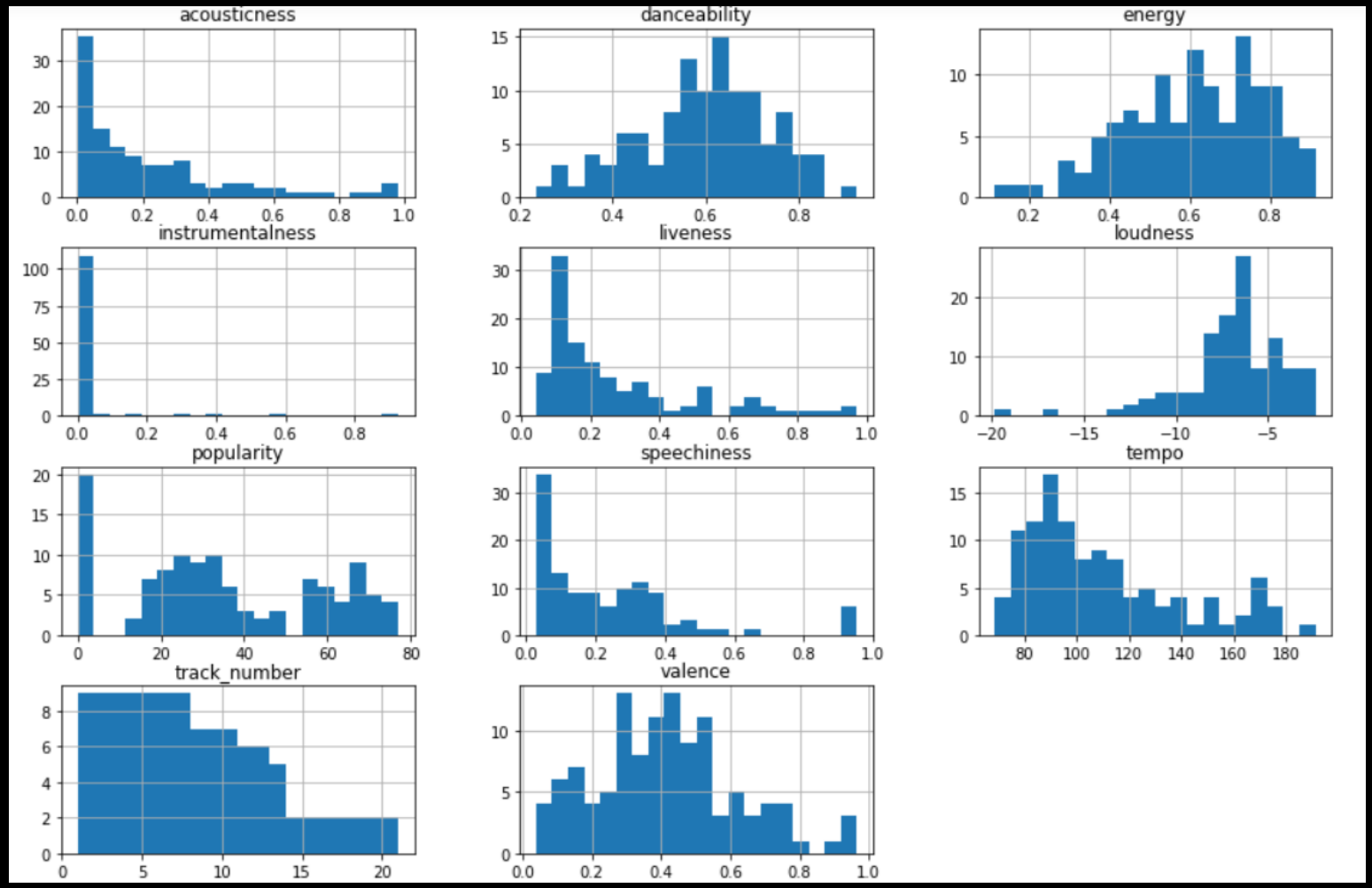
- Song Bird is a recommendation system to help combat this situation
- Song Bird recommends songs similar to the one you liked within the same artist's entire discography
- Our goal is to give the user a handful of songs to listen to that would better fit the song that was initially encountered
- Users should not have to sift through the entire artist's history of songs to find songs close to the one they liked

# HOW IT WORKS: SONG FEATURES

```
# Create variables for the artist name and song name
search_artist_name = 'Kanye West'
search_song_name = 'Good Morning'
```

```
Artist Name : Kanye West

Album: KIDS SEE GHOSTS
Album: ye
Album: The Life Of Pablo
Album: Yeezus
Album: My Beautiful Dark Twisted Fantasy
Album: 808s & Heartbreak
Album: Graduation
Album: Late Orchestration
Album: Late Registration
```



# HOW IT WORKS: TOPIC MODELING

SCRAPE LYRICS

↓

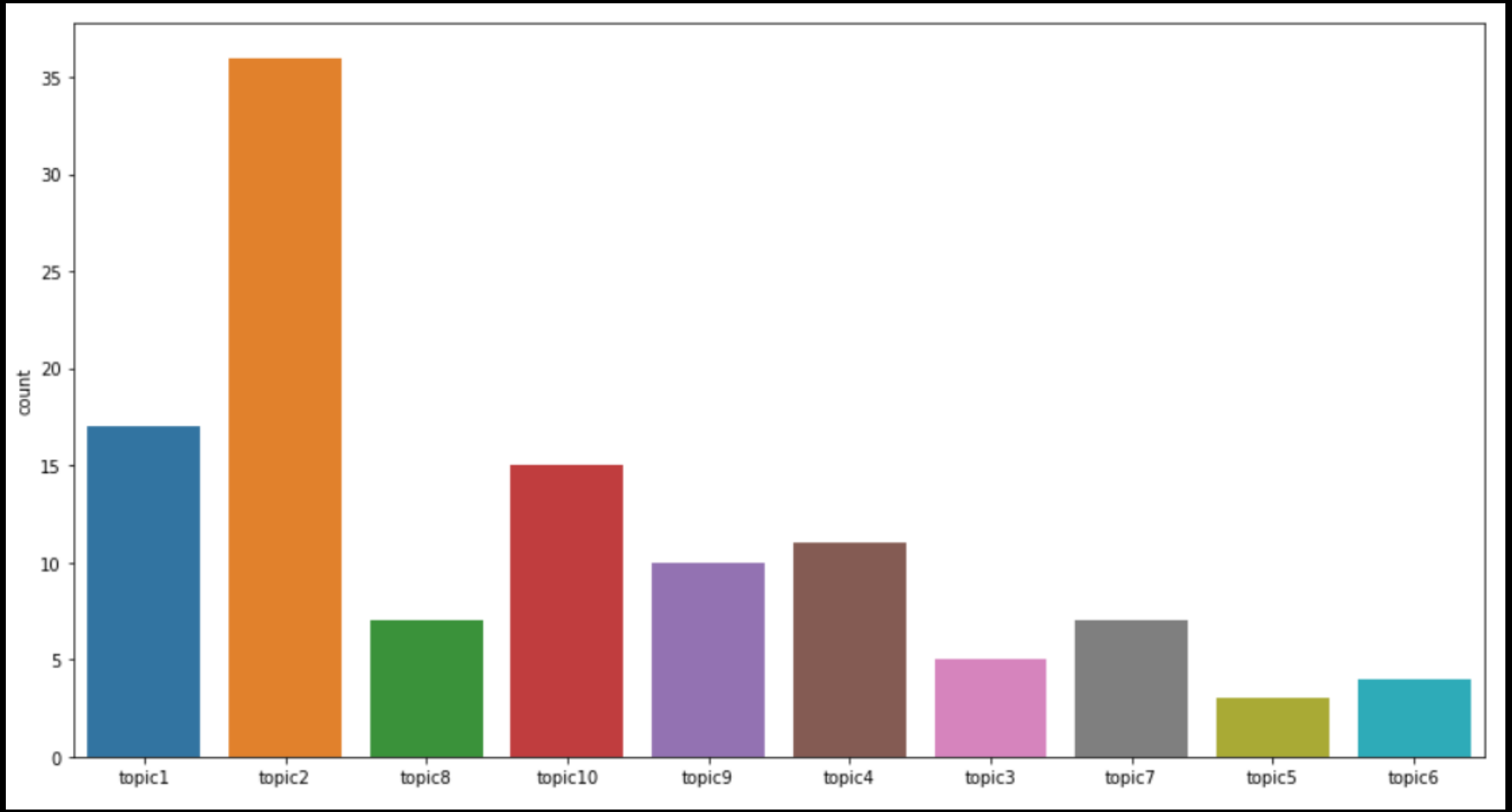
CLEAN AND LEMMATIZE

↓

TF - IDF

↓

NON-NEGATIVE MATRIX FACTORIZATION



# RESULTS

## KMEANS

Similar songs to Good Morning are:

Yikes
Blood On The Leaves
Bound 2
I Wonder
Good Life
Barry Bonds
Late

## AFFINITY PROPOGATION

Similar songs to Good Morning are:

Frank's Track
Facts (Charlie Heat Version)
Blood On The Leaves
Guilt Trip
Say You Will
Coldest Winter
I Wonder
Good Life
Barry Bonds
Homecoming
My Way Home
Late

## MEAN SHIFT

Similar songs to Good Morning are:

I Thought About Killing You
Yikes
All Mine
Wouldn't Leave
No Mistakes
Ghost Town
Violent Crimes
Ultralight Beam
Father Stretch My Hands Pt. 1
Pt. 2
Famous
Feedback
Low Lights
Highlights
Freestyle 4
I Love Kanye
Waves
FML
Real Friends
Wolves
Frank's Track
30 Hours
No More Parties In LA
Facts (Charlie Heat Version)
Fade
On Sight
Black Skinhead
I Am A God
New Slaves

## SPECTRAL

Similar songs to Good Morning are:

Father Stretch My Hands Pt. 1
Fade
Guilt Trip
RoboCop
Street Lights
Coldest Winter
Champion
Stronger
I Wonder
Good Life
Barry Bonds
Flashing Lights
Workout Plan - Live At Abbey Road Studios
Bring Me Down

# EVALUATION

```
KMEANS CLUSTERING
Kmeans using MinMax Scaling Mean: 0.2081694838985343
Kmeans using MinMax Scaling Standard Deviation: 0.019525320454379713
Kmeans using Standard Scaling Mean: 0.21376990699506332
Kmeans using Standard Scaling Standard Deviation: 0.016559967132160763

MEANSHIFT CLUSTERING
MeanShift using MinMax Scaling Mean: 0.24802478455598226
MeanShift using MinMax Scaling Standard Deviation: 0.03974558206557161
MeanShift using Standard Scaling Mean: 0.2681394776993736
MeanShift using Standard Scaling Standard Deviation: 0.063600881623724 38

SPECTRAL CLUSTERING
Spectral Clustering using MinMax Scaling Mean: 0.17738174438281498
Spectral Clustering using MinMax Scaling Standard Deviation: 0.018309311005846422
Spectral Clustering using Standard Scaling Mean: 0.051189204059734025
Spectral Clustering using Standard Scaling Standard Deviation: 0.07990216738792602

AFFINITY PROPOGATION
Affinity Propogation using MinMax Scaling Mean: 0.20427033905814282
Affinity Propogation using MinMax Scaling Standard Deviation: 0.014835156336373913
Affinity Propogation using Standard Scaling Mean: 0.20449154930304608
Affinity Propogation using Standard Scaling Standard Deviation: 0.01772040852712083
```

- Mean-Shift clustering had the highest average of scores, but the longest recommendation list.
- Affinity Propogation had the least average Standard Deviation in the scores.

# FUTURE IMPROVEMENTS

- There is much more we can do before having this product become a production integration running in a music streaming service.

1. Efficiency – DEV application must gather data that could potentially already be available in an existing streaming service
2. Obtaining song “likes” information to have a ground truth
3. Ordered list of song recommendations based on similarity
4. Gathering more song features
5. Including featured artists

# THANK YOU