

**Spotify's music
recommendation based on
users' social media structure**

Goals

- Using Spotify users' playlists and their corresponding Twitter's networks to understand how friends (and followers) influence users' music taste
- Constructing a new music recommendation method based on the previous findings

Why?

- Recommendation system is becoming more popular
- Music recommendation is an interesting field because of its richness in content and its variety in genres
- Spotify's playlist is the truest representation of a user's music preference
- Understanding music playlist can also lead to the understanding of other users' media collection

Data collection

Creating seed users list

- Seed users are users who we will conduct our research on
- Spotify API is limited in getting users and users' info
- Spotify users often share what they are listening to Twitter
- Can gather user user's friends and followers list on Twitter

Creating seed users list

- Using Twitter streaming API to search for tweets that contain *"spotify"* or *"#NowPlaying"* or both
- For each tweet, use the posters' username to search for their profile on Spotify
- If found on Spotify, consider the poster a seed user
- Result in a seed user list

Generating information based on seed users

- Gather seed users' playlist information, including songs, added date and other trivial information (genre, artists, etc.)
- All of the seed users' information, both on Twitter and Spotify, will then be store in a JSON object
- For each seed user, get the list of 200 friends and 200 followers, apply the same procedure with seed user

Generating information based on seed users

- The results are 2 separate files:
 - A file of tweets with seed user's username, date tweeted, etc.
 - A JSON file contains all the valid users' information of their friends, their followers, and their corresponding playlist
- An user is valid if:
 - He/she shares the same username on Spotify and Twitter
 - He/she has 3 or more public Spotify playlists

Thu May 03 03:40:43 +0000 2018,apaagbayani,31732126,By now, everyone is well aware of me. You think you can take care of me but, boy, you should be fucking scared of me and you love that, I KNOW YOU LOVE THAT. <https://t.co/QR5owT77je>
count: 1
=====

Thu May 03 03:40:59 +0000 2018,securenet,15518784,Brian Culbertson - It's Only You <https://t.co/4yBnVVxT9C> #nowplaying #cirrusplayer
count: 2
=====

Thu May 03 03:41:21 +0000 2018,cacoteo,101437210,#NowPlaying on #CacoteoRadio #Reggaeton Gary Clan Ft. Yamil - Si Te Gusta Repite (Prod. Duran The Coach & amp; Movie Makers) - <https://t.co/Wvn56oxvbo>
count: 3
=====

Thu May 03 03:41:27 +0000 2018,securenet,15518784,Paramore - When It Rains <https://t.co/4yBnVVxT9C> #nowplaying #cirrusplayer
count: 4
=====

Thu May 03 03:41:33 +0000 2018,cacoteo,101437210,#NowPlaying on #CacoteoRadio #Reggaeton Gary Clan Ft. Yamil - Si Te Gusta Repite (Prod. Duran The Coach & amp; Movie Makers) - <https://t.co/Wvn56oxvbo> <https://t.co/Wvn56oxvbo>
count: 5
=====

Thu May 03 03:41:40 +0000 2018,SpotifyCares,497340309,@danoggames Hey there, help's arrived! What's happening exactly? Could you let us know the device, operating system, and Spotify version you're on? We'll look into this /RX
count: 6
=====

Thu May 03 03:41:43 +0000 2018,HoveringColors,930672915217108994,Footsteps in the Dark, Pts. 1 & 2 by The Isley Brothers <https://t.co/YKFB62aAvi> #NowPlaying
count: 7
=====

Thu May 03 03:41:50 +0000 2018,joekiddone,18072060,So Far Away by Crossfade <https://t.co/aV9kHmXjYE> #NowPlaying
count: 8
=====

Thu May 03 03:41:51 +0000 2018,bec,570304332,At the gym, I tapped my AirPod to ask Siri to turn Spotify down, and instead, she started reciting the weather in Tennessee 🤔
count: 9
=====

Thu May 03 03:41:51 +0000 2018,feetwoodmac,848231054162903040,@Spotify put aaliyah's Are You That Somebody onto spotify
count: 10
=====

Thu May 03 03:41:55 +0000 2018,RadDance,711826025349517312,#nowplaying #dance #clubbing #soul #RnB Fast Eddy's Blue Band - Let The Good Times Roll on <https://t.co/DMjT0dsb8r>
count: 11
=====

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Total followers: 0
=====
getting seed user ftnnramirah
*****
Seed user playlist:
2000
d e p r e s s e d
ALEX'S SECRET PLAYLIST 🐱
mnstrm
suicidal/selfharm/neckdeep
Suicidal thoughts... 🗡️
Autumn Leaves
The PMS Playlist
Melancholia
Deep Dark Indie
Shout Out to My Ex
Comfort Zone
Best of '00s Pop
Broken Heart
Sing-Along: 90's to Now
Sounds like High School
Malaysia Top 50
It's a Hit!
New Music Friday Malaysia
Sleep
Before Tidur
*****
Total friends: 0
Total followers: 0
=====

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Sun Apr 22 06:34:27 +0000 2018, ftnnramirah, 2452196665, we stan all <https://t.co/jb7EDH0CjT>

Sun Apr 22 06:34:54 +0000 2018, ftnnramirah, 2452196665, RT @chartdata: Biggest opening days on US Spotify: #1 KOD, @JColeNC 4.2m | #2 Look What You Made Me Do, @taylorswift13 3.8m | #3 DNA., @ken...

Stats:

For all the tweets gathered, around **10%** of the posters are considered valid users

For all the seed users' followers and friends, around **30%** of them are considered valid users

What's next

- Make the data cleaner (work with accounts that are radio station/ music recommendation account)
- Analyze gathered data
- Based on the current playlist, simulate the user playlists' growth and derive analysis on how followers and friends' playlists affect them
- Coming up with a practical recommendation algorithm