

Album Discoverer

Metis Final Project
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June 17, 2020

Rise of Playlists and Track Recommendations

- Most recommendation systems work at the track level
- Track recommendations inform playlist generation
- Track inclusion and order on an album are artistic choices
- Album progression and themes are lost when focusing on individual tracks

Methods

Data Sources:

- Metacritic's Top Albums of All Time (n=1093)
- Spotify API (n=992)

Tools:

- BeautifulSoup/requests
- Pandas/Numpy/matplotlib/seaborn
- Scikit-learn
- CorEx
- Flask

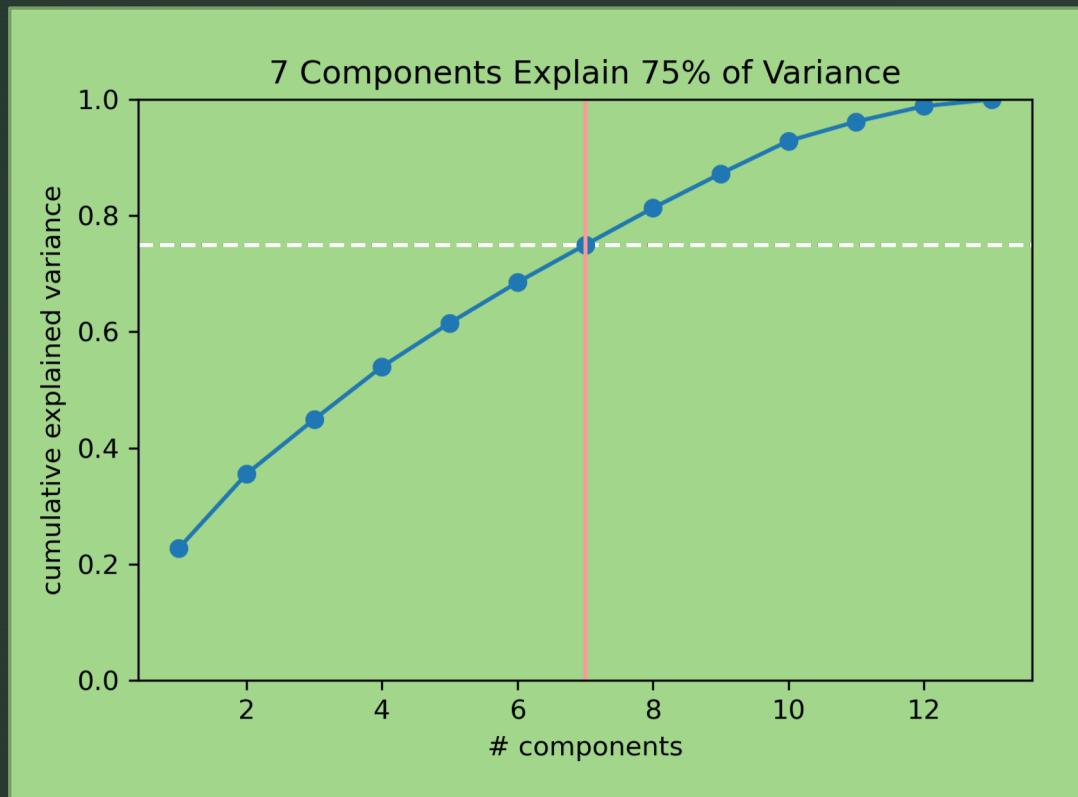


Features

- Danceability
- Energy
- Key
- Loudness
- Mode
- Speechiness
- Acousticness
- Instrumentalness
- Liveness
- Valence
- Tempo
- Duration
- Time Signature
- Genre (artist)

Aggregating Track Level Data to Album Level

- Scaled features
- PCA for dimensionality reduction
- Averaged each component across all tracks in album



The Messiness of a Musician's Genre



'art pop', 'chamber pop', 'indie pop',
'lilith', 'permanent wave', 'piano rock',
'pop rock', 'singer-songwriter'

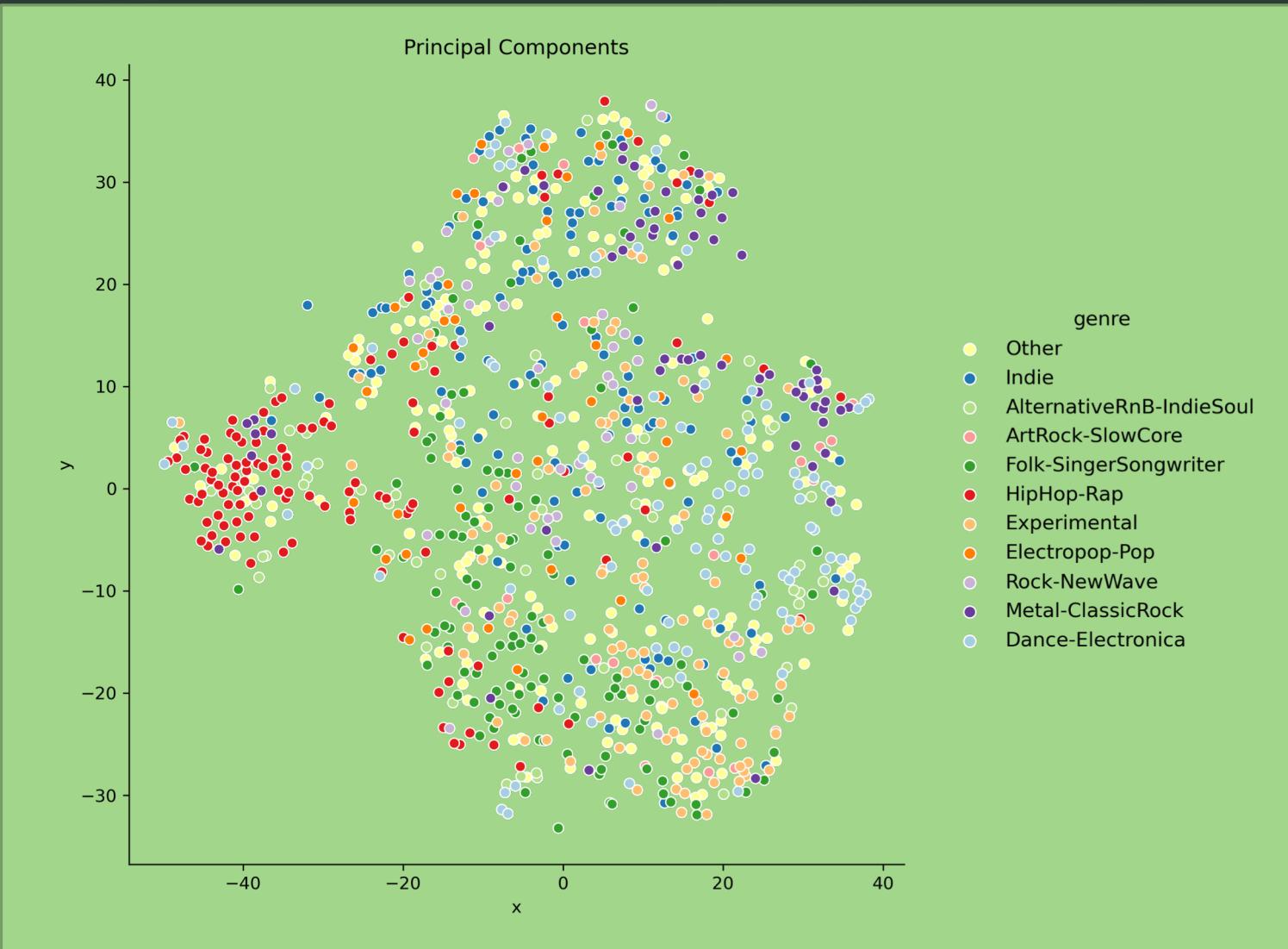


'afrofuturism', 'alternative r&b', 'art
pop', 'atl hip hop', 'dance pop',
'electropop', 'escape room', 'neo
soul', 'pop', 'r&b'

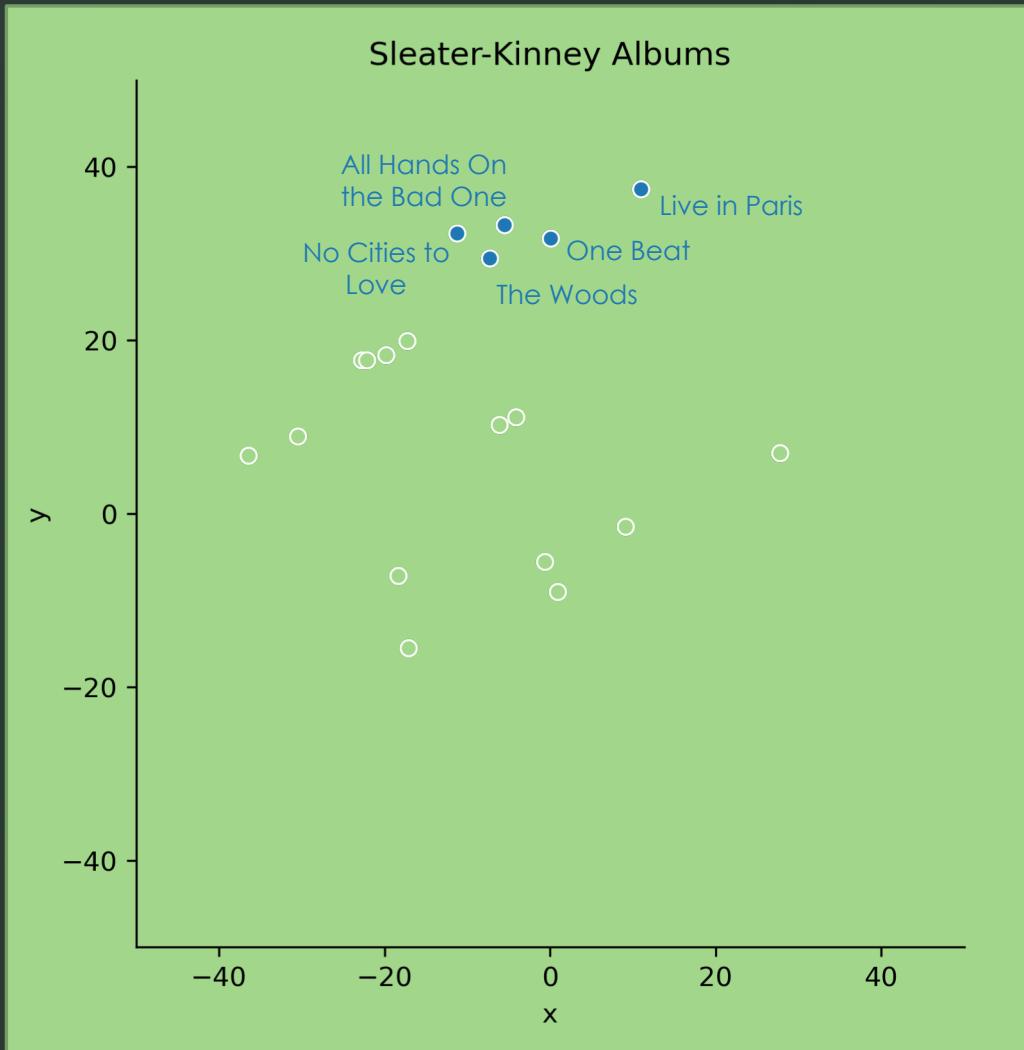
Dimensionality Reduction to Assign Genre

- **Folk/Singer-Songwriter**
- **Hip-Hop/Rap**
- Dance/Electronica
- Metal/Classic Rock
- Indie
- Experimental
- Alternative R&B/Indie Soul
- Rock/New Wave
- Electropop/Pop
- Art Rock/Slow Core
- Other

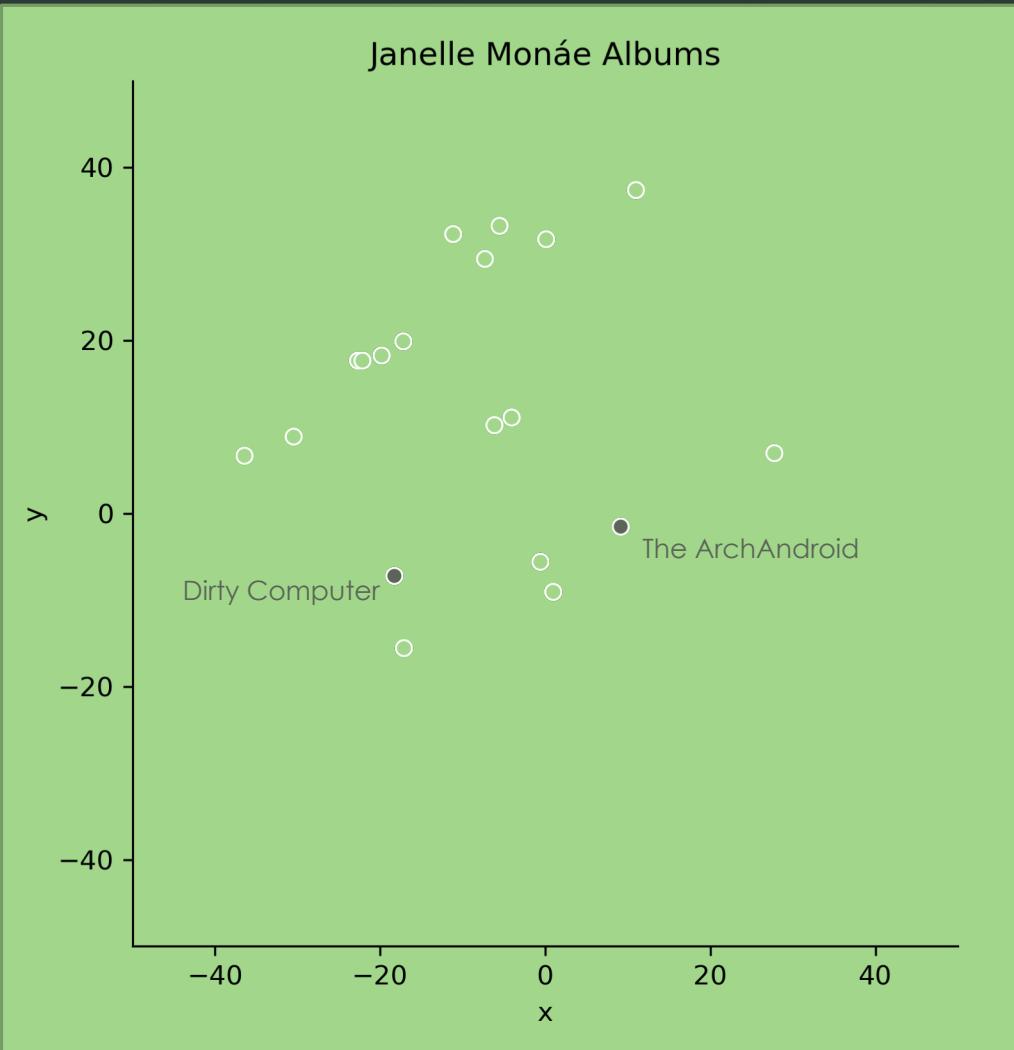
Validation of PCA



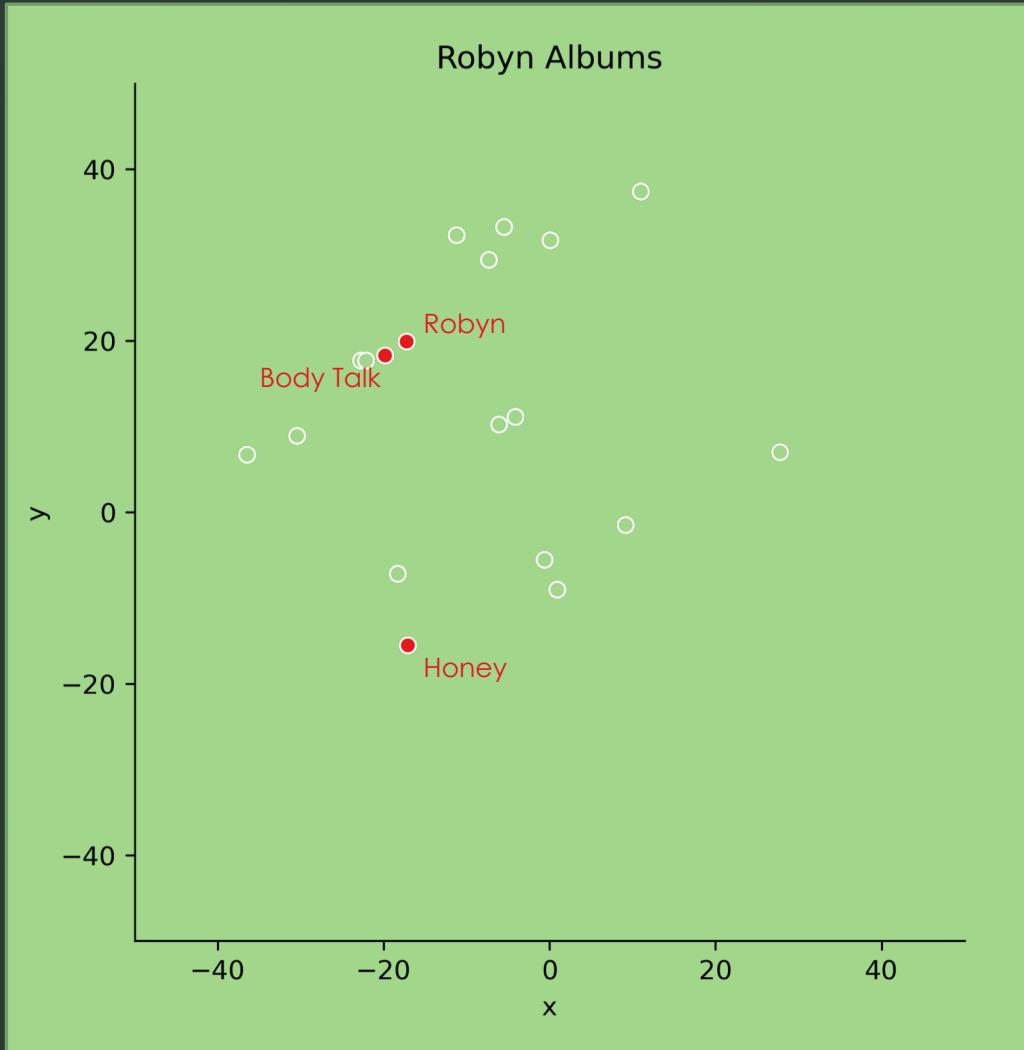
Artist Examples



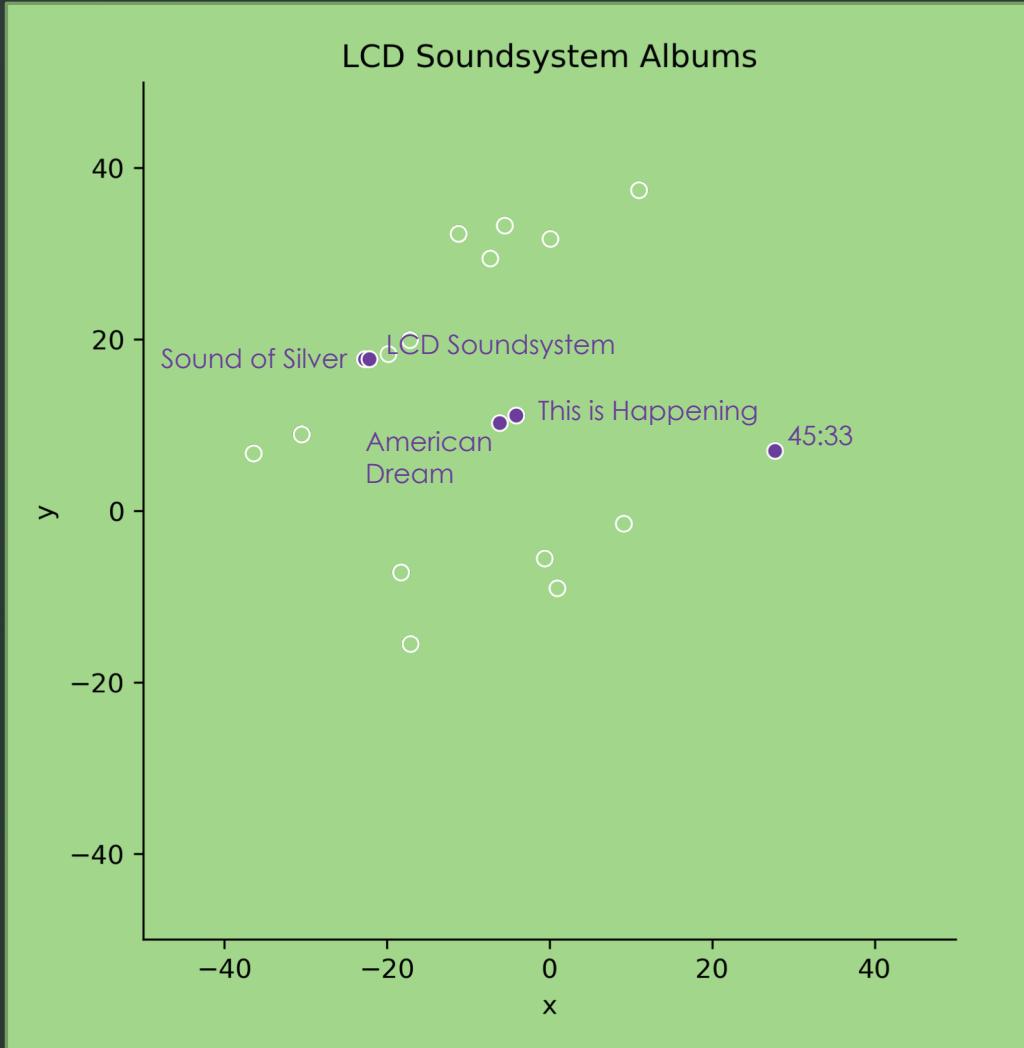
Artist Examples



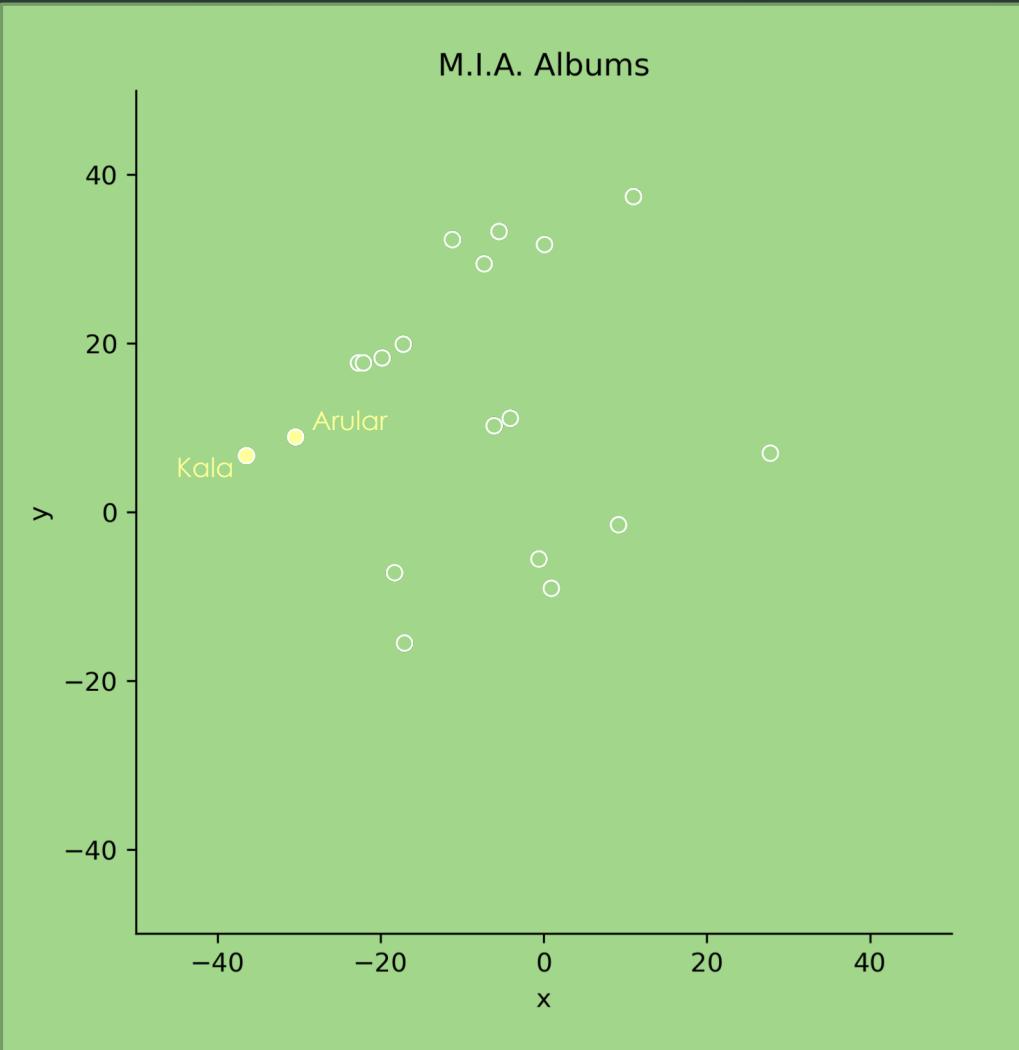
Artist Examples



Artist Examples



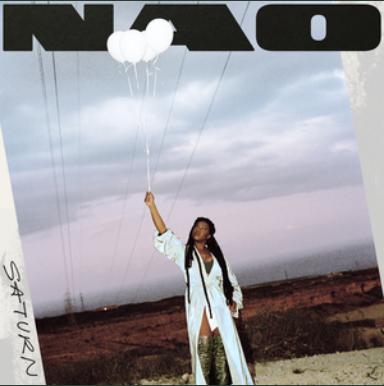
Artist Examples



The Recommender



Ezra Furman –
Transangelic Exodus



nao - Saturn



Wilco – Yankee
Hotel Foxtrot



The White Stripes -
Elephant



Janelle Monáe –
Dirty Computer



Solange – A Seat
At the Table

Flask App

The screenshot shows a web application interface. At the top, there is a navigation bar with three items: "Home", "Get an Album Recommendation", and "See a List of Top Albums". Below the navigation bar, a green header bar contains the text "Welcome to the Album Discoverer!". Underneath the header, the text "You can:" is followed by a bulleted list of two items: "Input an album and get recommendations" and "See a list of Metacritic's top rated albums for inspiration". Further down the page, the text "What would you like to do?" is displayed, followed by two green rounded rectangular buttons. The top button contains the text "Get an album recommendation" and has a small cursor icon pointing to it. The bottom button contains the text "See a Top 100 list".

Home Get an Album Recommendation See a List of Top Albums

Welcome to the Album Discoverer!

You can:

- Input an album and get recommendations
- See a list of Metacritic's top rated albums for inspiration

What would you like to do?

Get an album recommendation

See a Top 100 list

Flask App

Home Get an Album Recommendation See a List of Top Albums

Your Recommendations

Based on your input album:

Artist	Janelle Monáe
Album	Dirty Computer

The Album Discovery Tool suggests:

Recommendation	Artist	Album
1	Ezra Furman	Transangelic Exodus
2	nao	Saturn
3	Wilco	Yankee Hotel Foxtrot
4	The White Stripes	Elephant
5	Solange	A Seat at the Table

If the input album appears in the top 5 list, copy the artist and album as they appear in the top 5 list, and re-enter the names on the previous page. This recommendation system is sensitive to variations in spelling and naming.

Flask App

The screenshot shows a web page titled "Your Recommendations". At the top, there is a navigation bar with links to "Home", "Get an Album Recommendation", and "See a List of Top Albums". Below the navigation bar, the main content area has a green header with the title "Your Recommendations". The content starts with the text "Based on your input album:". Below this, there is a table with two rows:

Artist	Talking Heads
Album	Once In A Lifetime

Below the table, the text "The Album Discovery Tool suggests:" is followed by another table:

Recommendation	Artist	Album
1	Spoon	Gimme Fiction
2	Spoon	Kill The Moonlight
3	Staff Benda Bilili	Bouger le Monde!
4	Mélissa Laveaux	Radyo Siwèl
5	Spoon	Girls Can Tell

At the bottom of the page, there is a note: "If the input album appears in the top 5 list, copy the artist and album as they appear in the top 5 list, and re-enter the names on the previous page. This recommendation system is sensitive to variations in spelling and naming."



Thank you!

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