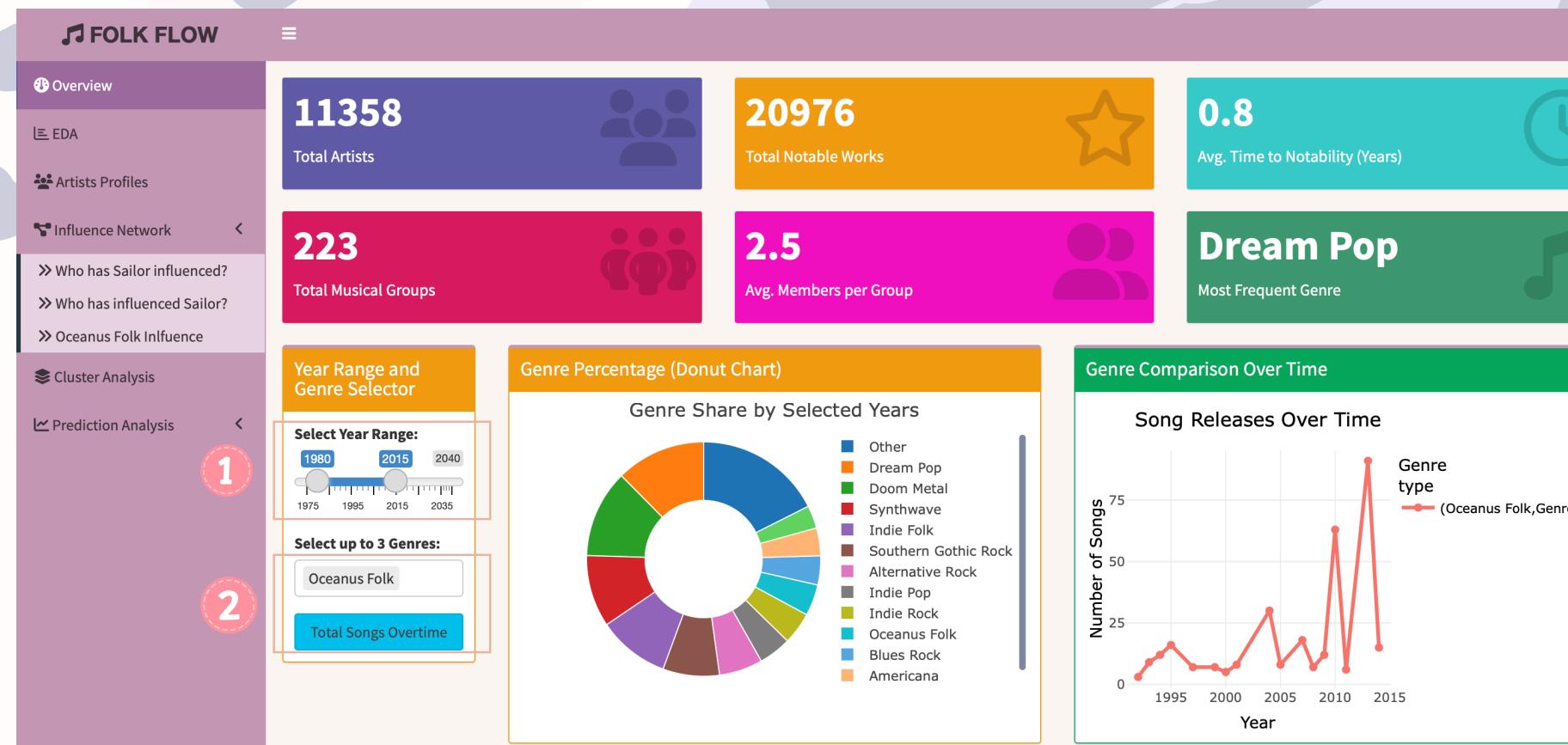


# Folks Flow

**SHINY APP USER GUIDE**  
**BY GROUP 13**

# OVERVIEW



## Filters and Controls (Left Section)

This panel allows users to customize the view:

### 1. Year Range Slider

- Allows selection of a custom year range (e.g., 1980-2015) to filter the analysis window.
- Affects genre distribution and song release trend visualizations.

### 2. Genre Selector

- Select up to 3 genres for comparison.
- Default selection shown is "Oceanus Folk".
- Press "Total Songs Overtime" to update related plots.

This section displays a paginated table of artist profiles. The table includes columns for person\_id, name, total\_works, notable\_works, oceanus\_folk\_works, first\_release, first\_notable, time\_to\_notability, collaborations, and genre\_dive. The table shows 10 entries out of 11,358 total.

person_id	name	total_works	notable_works	oceanus_folk_works	first_release	first_notable	time_to_notability	collaborations	genre_dive
1	1 Carlos Duffy	2	2	2	2017	2017	0	0	0
2	2 Min Qin	2	2	2	2017	2017	0	0	0
3	3 Xiuying Xie	1	1	1	2017	2017	0	0	0
4	6 Luke Payne	1	1	0	2026	2026	0	0	0
5	7 Xiulan Zeng	11	10	0	2013	2013	0	0	0
6	8 David Franklin	3	2	0	2025	2025	0	0	0
7	11 Gang Long	3	3	0	2013	2013	0	0	0
8	12 Yong Yi	2	2	0	2020	2020	0	0	0
9	13 Li Yi	4	4	0	2020	2020	0	0	0
10	16 Timothy Shea	3	1	0	2020	2020	0	0	0

Showing 1 to 10 of 11,358 entries

## Artists Profile Table (Bottom Section)

This section presents detailed artist-level data in a searchable and paginated table:

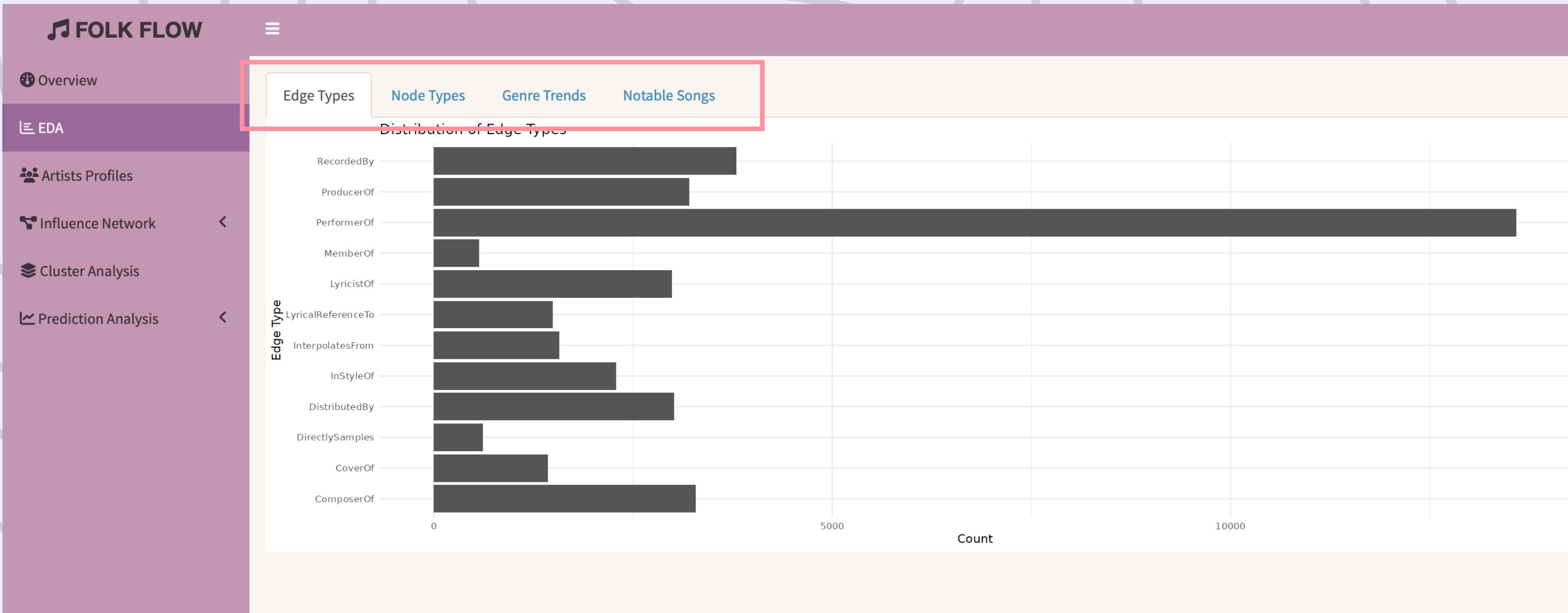
### 3 Entries Dropdown

- Adjusts how many artists are shown per page (e.g., 10, 25, 50).

### 4. Search Bar

- Allows searching by artist name or any other keyword in the table.

# EDA



## EDA Page – Tab Navigation Guide

The Exploratory Data Analysis (EDA) page is designed to help users explore the structure and content of the musical knowledge graph. It includes four interactive tabs that allow switching between different data perspectives.

- 1. Edge Types** – Displays a bar chart showing the distribution of relationship (edge) types between nodes (artists, songs, genres, etc.).
- 2. Node Types** – Shows the types of nodes (entities) in the dataset.
- 3. Genre Trends** – Visualizes the number of songs released over time for each genre.
- 4. Notable Songs** – Displays the number of songs marked as notable by genre.

# EDA

## FOLK FLOW

Overview

EDA

Artists Profiles

Influence Network

Cluster Analysis

Prediction Analysis



Edge Types

Node Types

Genre Trends

Notable Songs

### Select Year Range

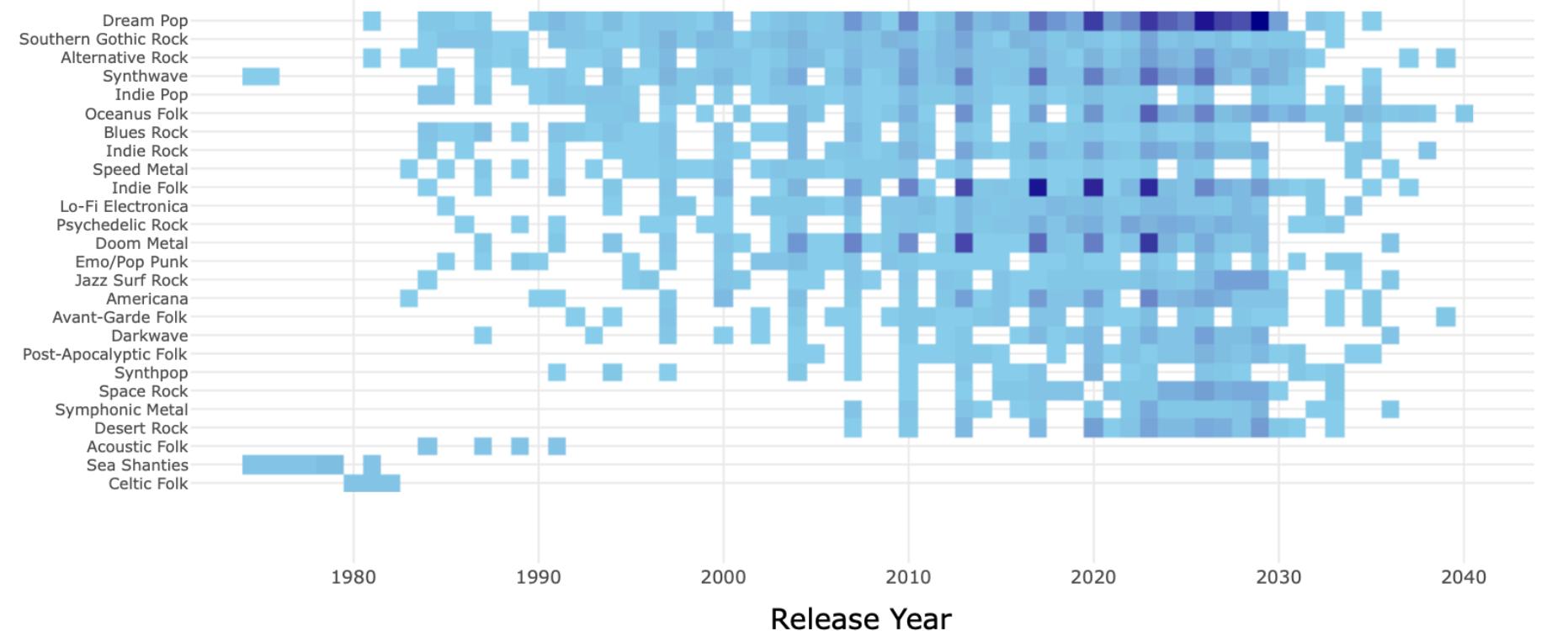
Release Year Range:

1975

2040

1975 1988 2001 2014 2027 2040

### Song Releases Over Time by Genre



# of Songs  
50  
40  
30  
20  
10

1980

1990

2000

2010

2020

2030

2040

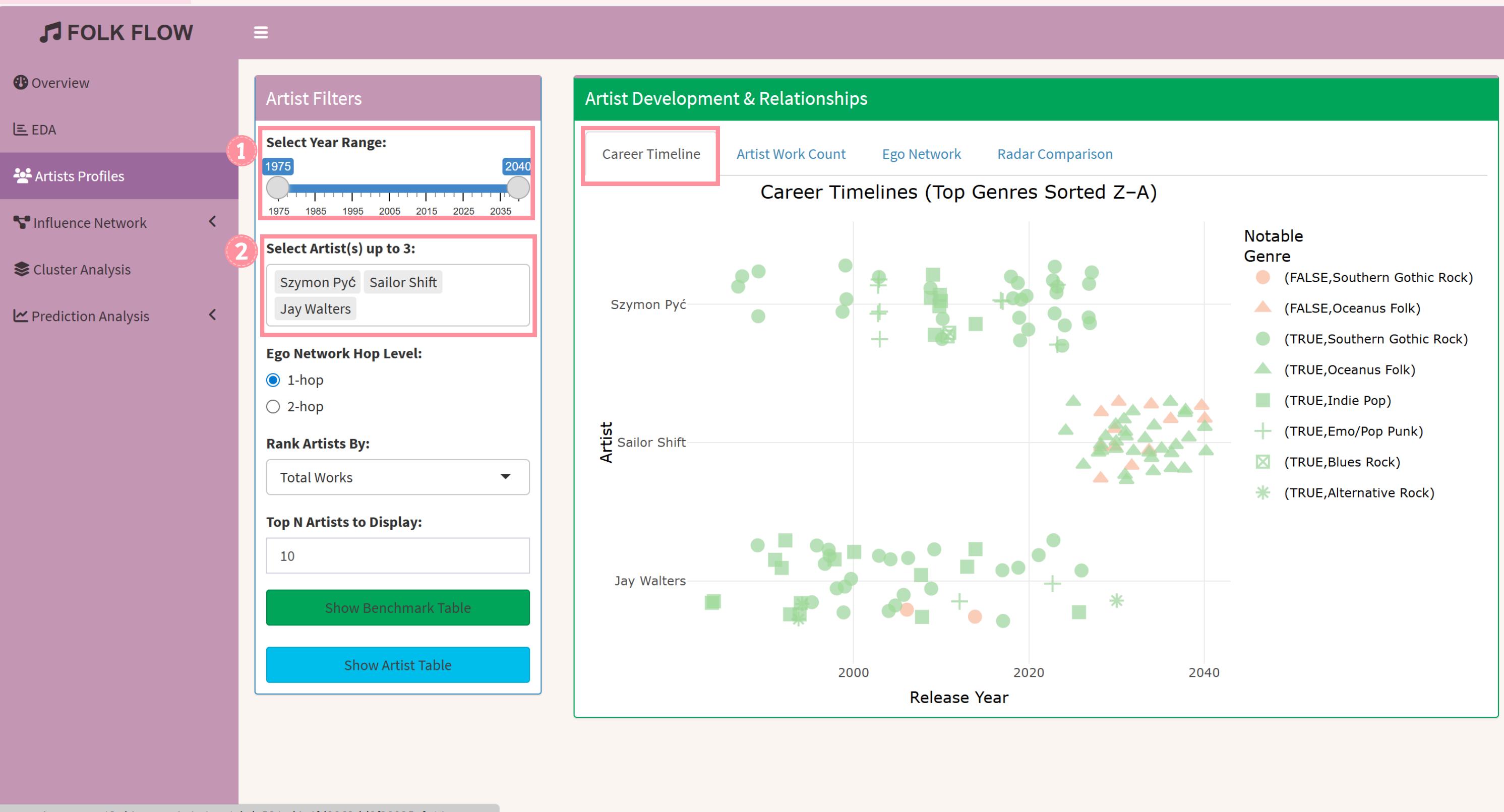
Release Year

### Tips for Interaction - Genre Trends

- Click tabs to navigate across different views.
- Hover heatmap cells for precise values.
- Use the year filter (Genre Trends tab) to narrow down temporal analysis.

# ARTISTS PROFILES - CAREER TIMELINE

This tab shows the career timelines of selected artists, with each point representing a music release. Colors and shapes indicate genre and notability, helping users explore genre trends and career patterns over time.



## 1. Select Year Range

- Use the slider to filter releases by year.

## 2. Choose 1-3 Artists

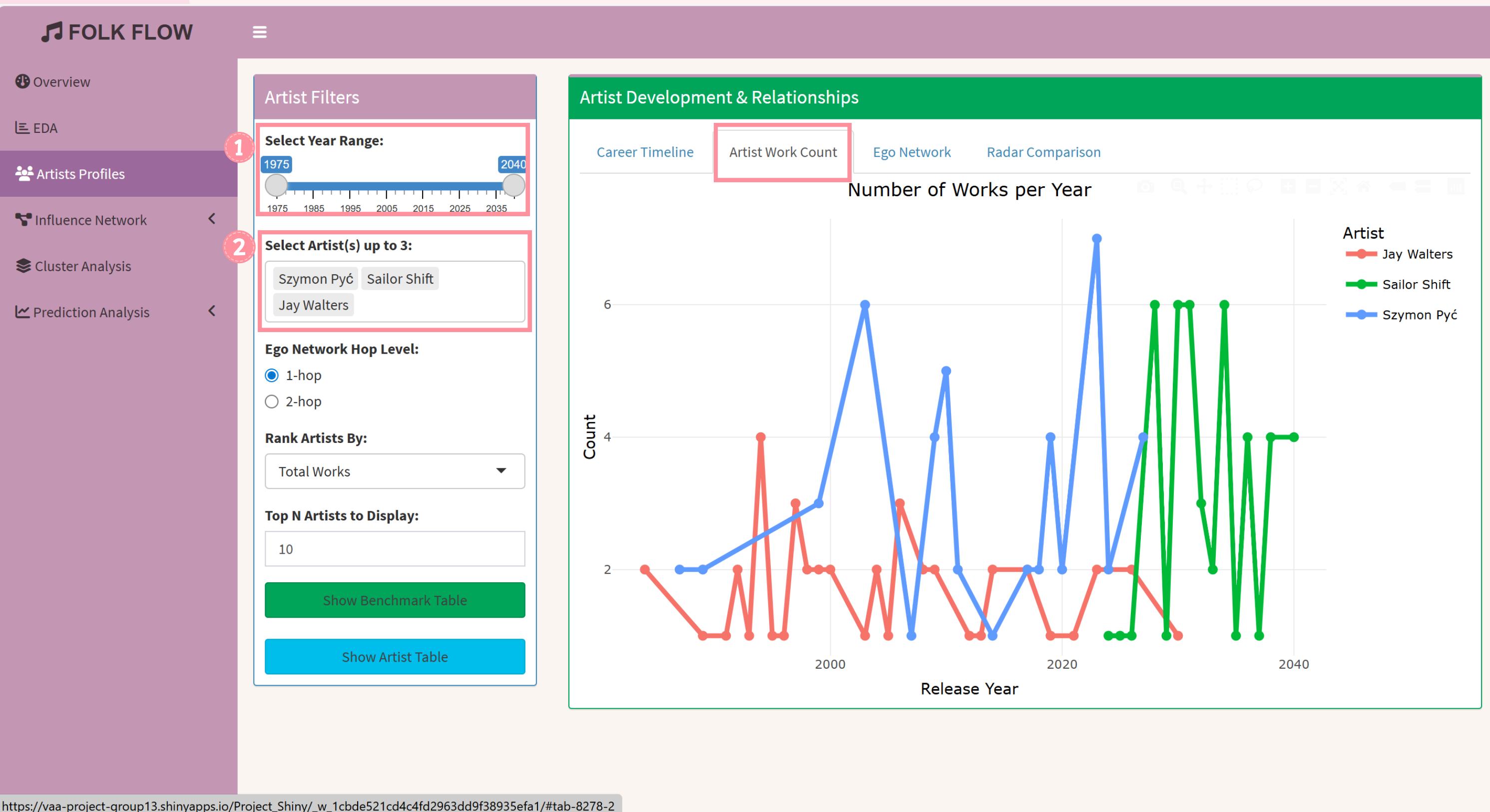
- Enter up to three artist names to display their career timelines.

## 3. View the Chart

- The plot shows each artist's releases, with genre and notability indicated in the legend. Use this to explore how their styles evolved over time.

# ARTISTS PROFILES - ARTIST WORK COUNT

This tab displays a line chart of yearly release counts for up to three selected artists. Each line tracks how many works an artist released per year, making it easy to compare productivity trends and identify peak creative periods.



**Control variables are the same as the Career Timeline tab:**

**1. Set Year Range**

- Use the slider to filter by release year.

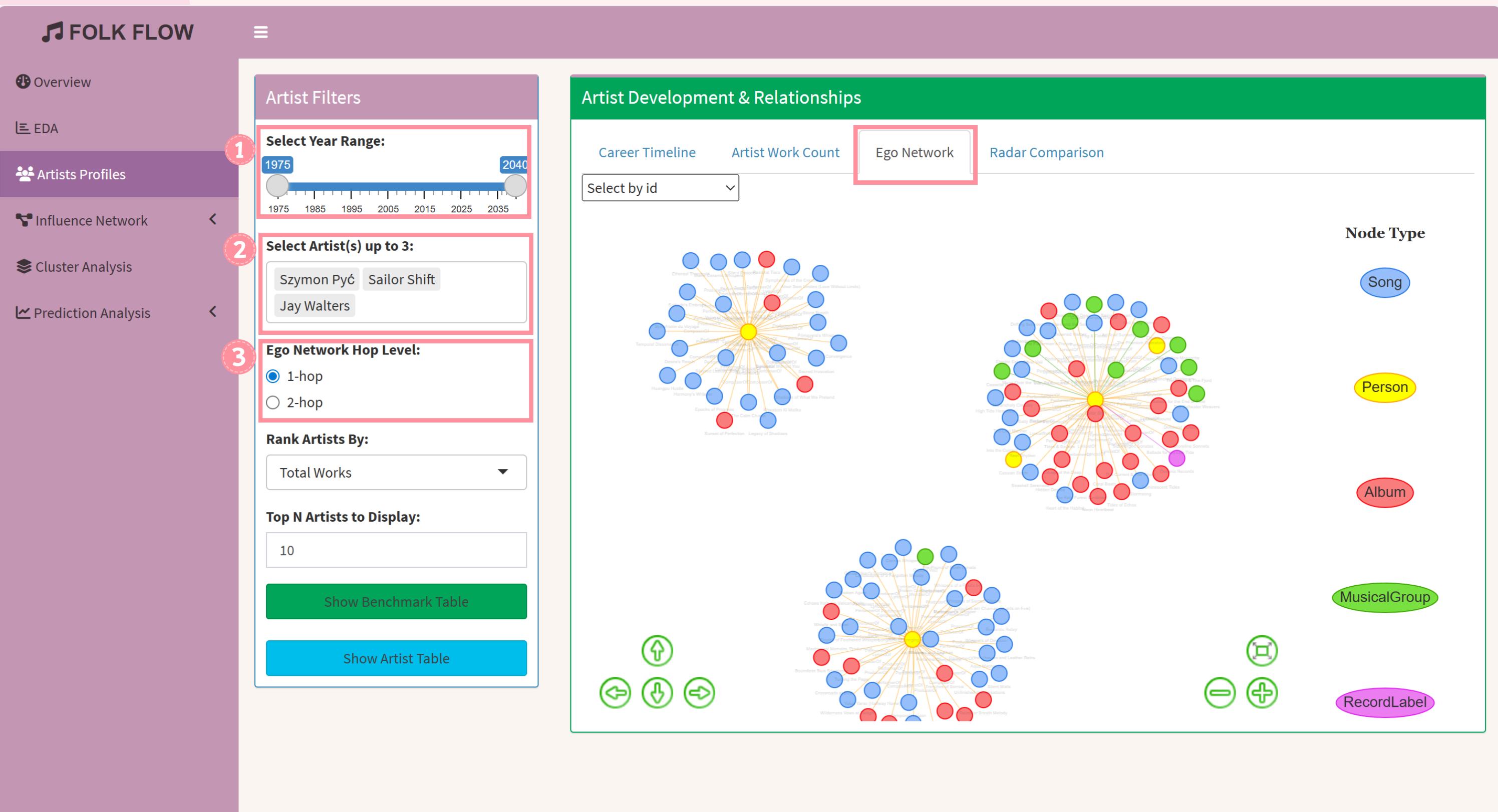
**2. Select 1-3 Artists**

- Choose up to three artists to compare their annual work counts.

**The chart will update to show how active each artist was over time.**

# ARTISTS PROFILES - EGO NETWORK

This tab visualizes the Ego Network of each selected artist as a circular node-link diagram. It reveals how artists are connected to related entities like songs, albums, labels, and collaborators, helping users explore the structure and reach of each artist's immediate network.



## 1. Select Year Range

- Use the slider to filter entities by release year.

## 2. Choose 1-3 Artists

- Select artists to generate their ego networks.

## 3. Set Ego Network Hop Level

- Choose between 1-hop (direct connections) or 2-hop (includes one level of neighbors' connections) to adjust the network depth.

# ARTISTS PROFILES - RADAR COMPARISON

This tab presents radar charts comparing up to three selected artists across key metrics such as total works, notability, collaborations, genre diversity, and time to notability. It helps users benchmark artist performance across multiple dimensions visually.

**FOLK FLOW**

**Artist Filters**

- Select Year Range:** Set the year range from 1975 to 2040.
- Select Artist(s) up to 3:** Choose Szymon Pyć, Sailor Shift, and Jay Walters.
- Hide Benchmark Table** and **Show Artist Table** buttons.

**Artist Development & Relationships**

**Radar Comparison** tab is selected.

**Szymon Pyć**, **Jay Walters**, and **Sailor Shift** radar charts showing performance across metrics: total\_works, notable\_works, oceanus\_folk\_works, collaborations, time\_to\_notability, and genre\_diversity.

**Radar Benchmark Table**

name	total_works	notable_works	oceanus_folk_works	collaborations	time_to_notability	genre_diversity
1 Szymon Pyć	49	49	0	0	0	5
2 Jay Walters	46	44	0	0	0	4
3 Sailor Shift	47	34	45	2	0	3

## 1. Select Year Range

- Filter the data by release year.

## 2. Choose 1-3 Artists

- Enter up to three artist names for comparison.

## 3. Toggle Benchmark Table

- Click the green "Show Benchmark Table" button to display the table below the radar plots. Click the red "Hide Benchmark Table" button to collapse it.

# ARTISTS PROFILES > ARTIST TABLE

This section displays the Artist Work & Collaboration Table, which provides detailed metrics for all artists, including total works, notable works, Oceanus Folk contributions, collaboration count, and genre diversity.

The screenshot shows the Folk Flow application interface. On the left, a sidebar menu includes: Overview, EDA, Artists Profiles (selected), Influence Network, Cluster Analysis, and Prediction Analysis. The main area has a header "FOLK FLOW" and a sub-header "Artist Development & Relationships". It features tabs for Career Timeline, Artist Work Count, Ego Network, and Radar Comparison. On the left, a panel titled "Artist Filters" contains: "Select Year Range" (1975 to 2040), "Select Artist(s) up to 3:" (empty input), "Ego Network Hop Level" (1-hop selected), and "Rank Artists By" (Total Works selected). Below these are "Top N Artists to Display" (set to 10) and buttons for "Show Benchmark Table" and "Hide Artist Table". A large red box labeled "3" highlights the "Artist Work & Collaboration Table" at the bottom. This table has a blue header with columns: person\_id, name, total\_works, notable\_works, oceanus\_folk\_works, first\_release, first\_notable, time\_to\_notability, collaborations, and genre\_diversity. It shows 10 entries of artist data.

person_id	name	total_works	notable_works	oceanus_folk_works	first_release	first_notable	time_to_notability	collaborations	genre_diversity
1	551 Szymon Pyć	49	49	0	1987	1987	0	0	5
2	17255 Sailor Shift	47	34	45	2024	2024	0	2	3
3	2070 Jay Walters	46	44	0	1984	1984	0	0	4
4	1716 Kimberly Snyder	41	37	0	2016	2016	0	0	6
5	2668 Ping Tian	37	36	0	1997	1997	0	0	6
6	2538 Angelika Osojca	36	33	0	1997	1997	0	0	6

## 1. Show/Hide Table

- Click the blue "Show Artist Table" button to display the data table. Use the red "Hide Artist Table" button to collapse it.

## 2. Control Table View

- Rank Artists By:** Choose a ranking method (e.g., total works, notable works, Oceanus Folk involvement).

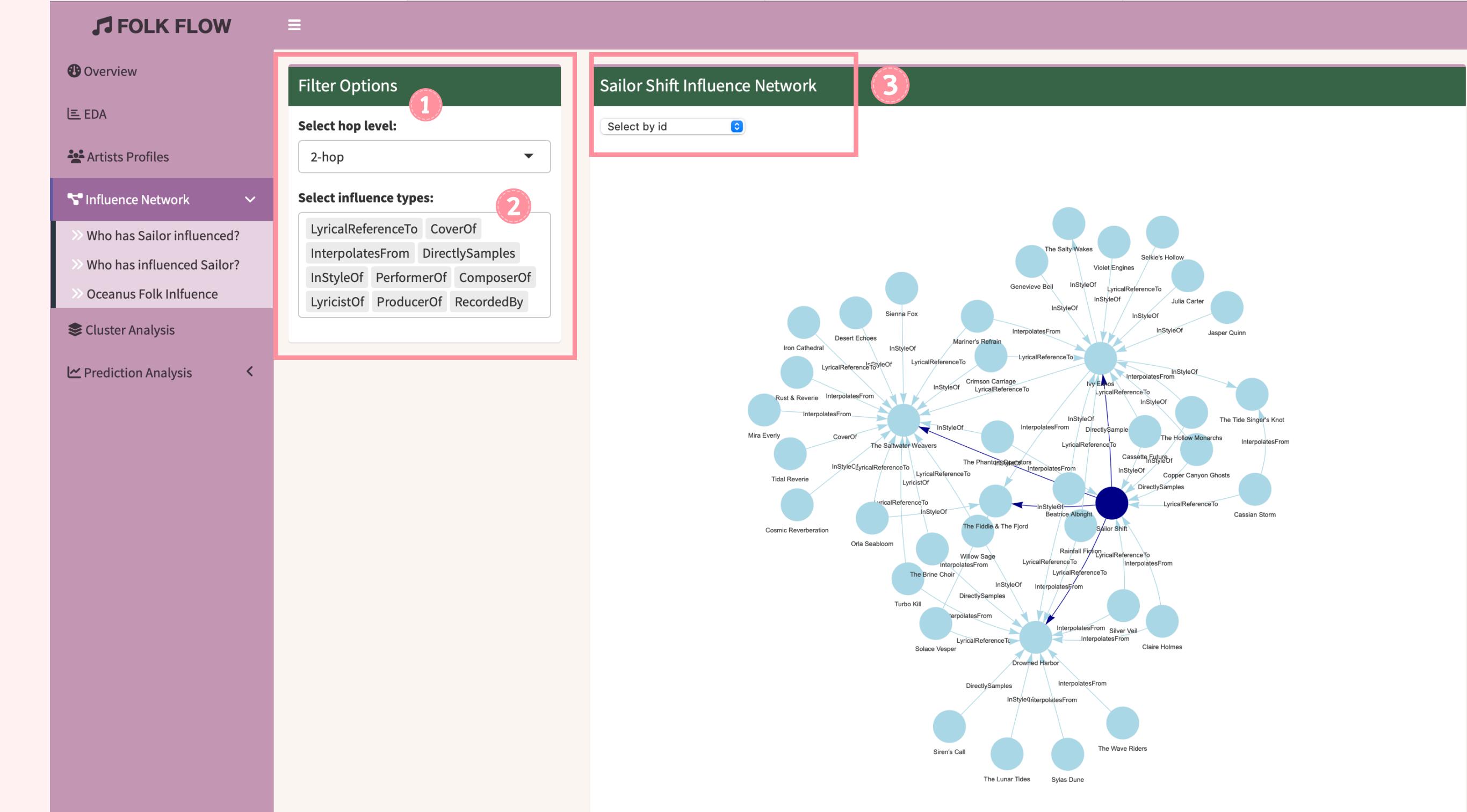
- Top N Artists to Display:** Enter a number to limit how many artists are shown.

## 3. Interact with the Table

- Use sorting by clicking column headers.
- Use the search bar to filter results by keyword.

# Influence Analysis

– Who has Sailor influenced?



This interactive module visualizes Sailor Shift's influence network, showing artists or works that have been directly or indirectly influenced by Sailor.

## 1. Select hop level

- 1-hop:** Shows only direct influence relationships from Sailor.
- 2-hop:** Includes indirect influences (influence of Sailor's influence)

## 2. Select influence types

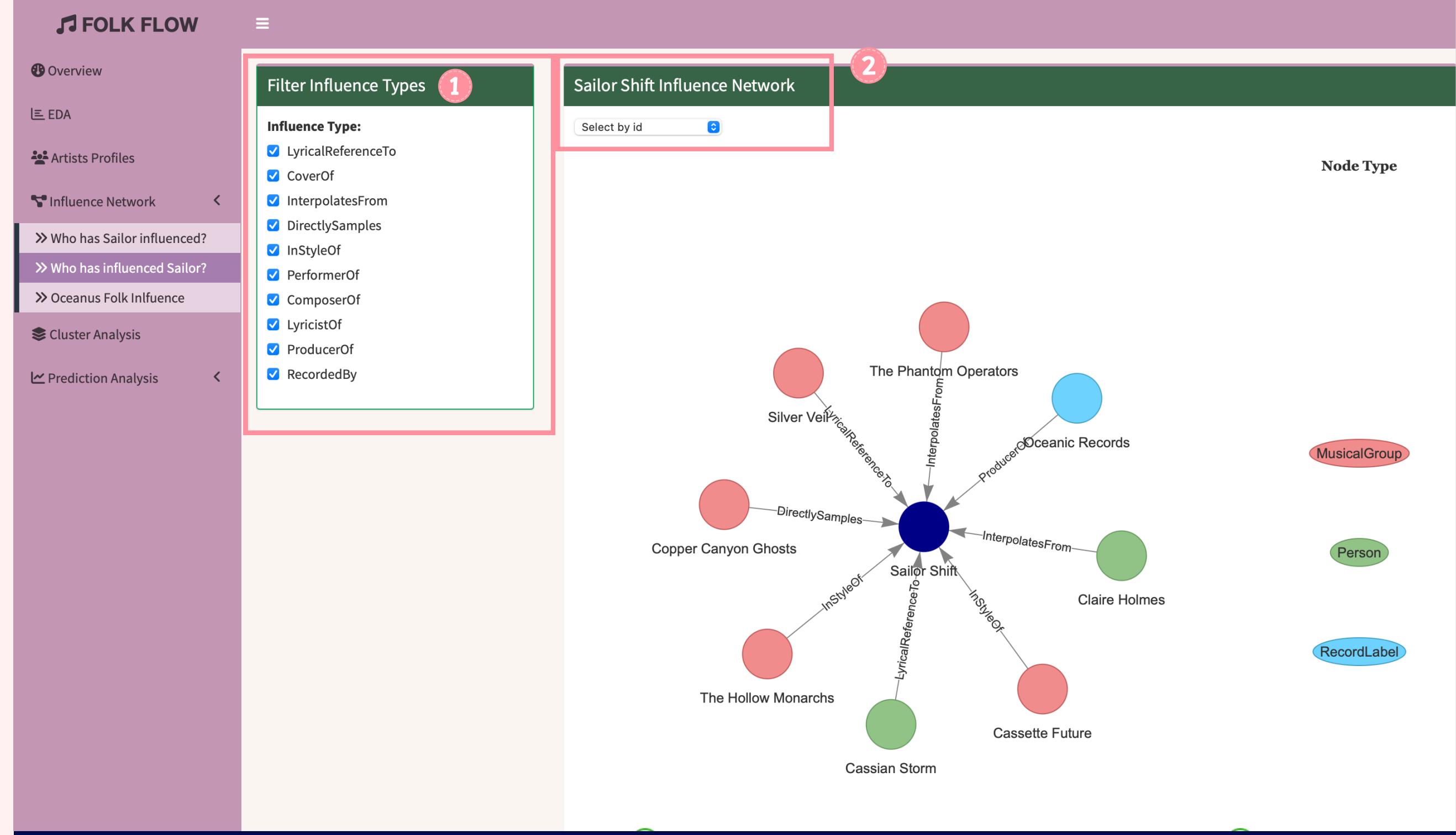
- Allows users to choose specific edge types (relationships).
- Multiple types can be selected simultaneously.

## 3. Dropdown – Select by ID

- Allows manual selection of an artist or node ID to highlight the network

# Influence Analysis

## - Who has influenced Sailor?



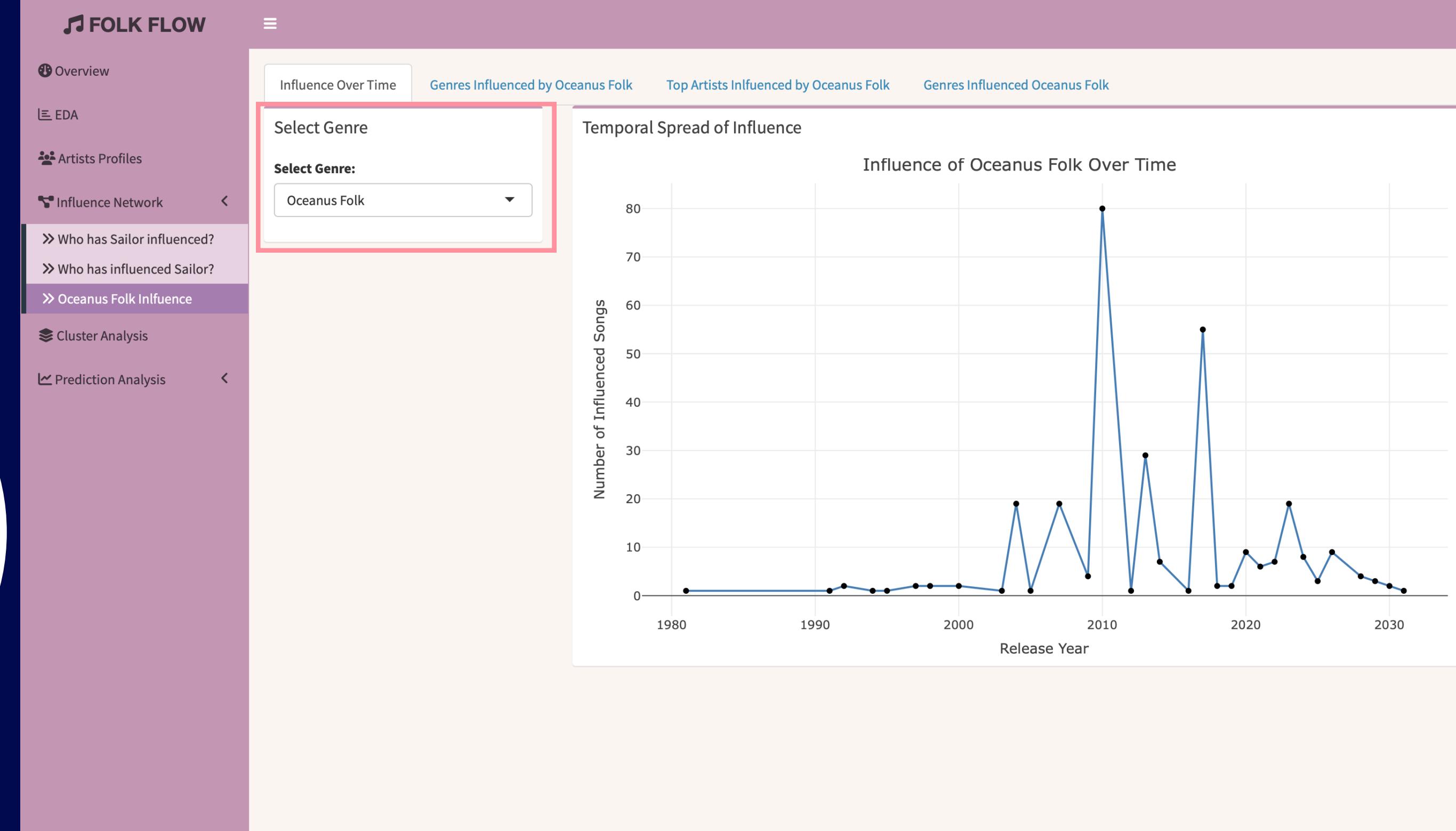
This module explores the incoming influence to Sailor Shift, allowing users to investigate artists, groups, or entities that contributed to Sailor's musical style and development. It's designed for understanding Sailor's inspirations and artistic lineage.

### 1. Filter Influence Types Panel (Left)

- **Function:** Selects the types of relationships to be shown in the influence network.
- **Options Include:** LyricalReferenceTo, InterpolatesFrom, CoverOf, DirectlySamples, InStyleOf, PerformerOf, ComposerOf, LyricistOf, ProducerOf, RecordedBy
- **Purpose:** Filters the graph to show only the relevant types of musical influence.

### 2. Dropdown - Select by ID (Right):

- Manually re-focus the network on the specific nodes.

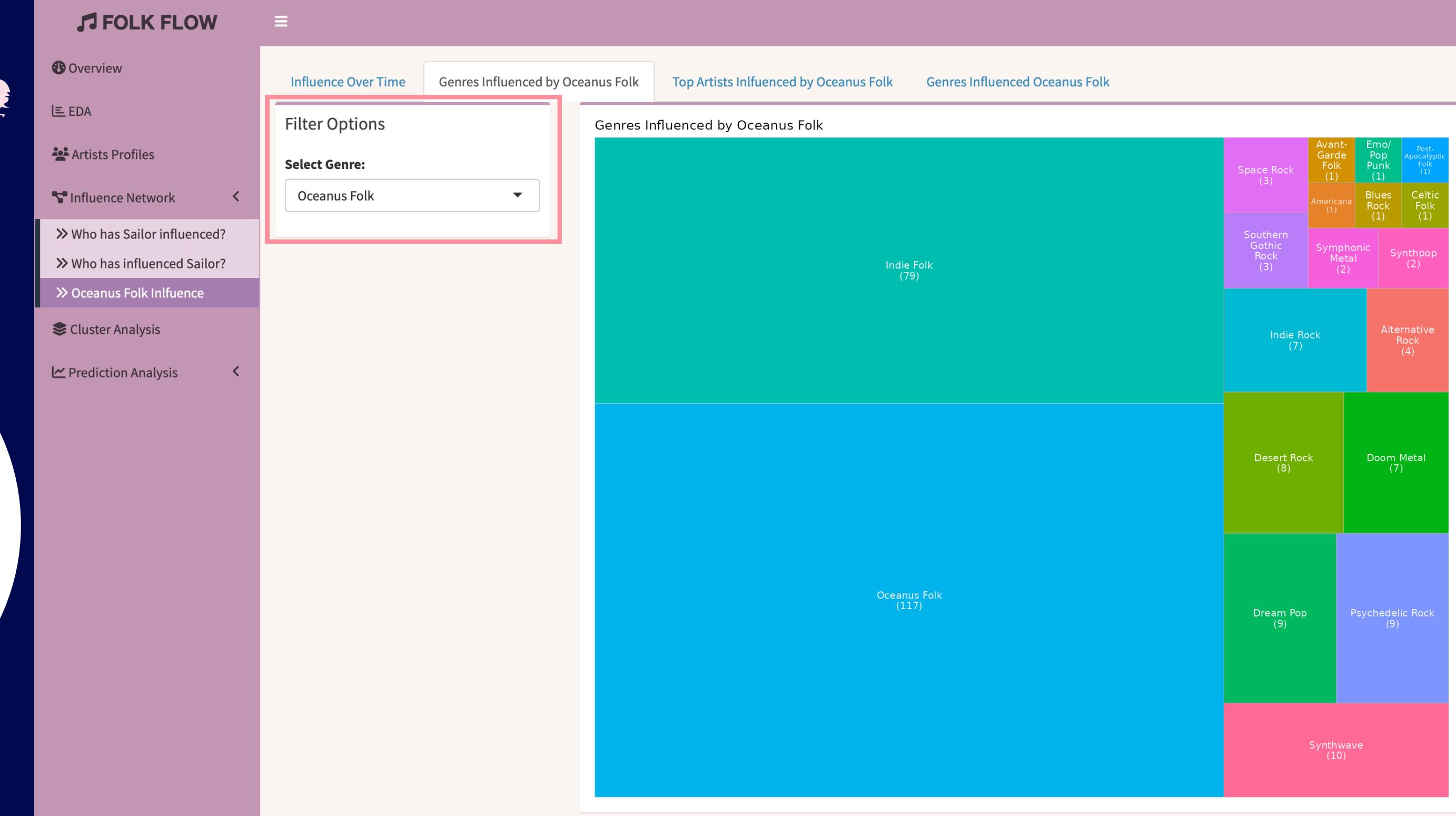


This module reveals how the Oceanus Folk genre has influenced the broader music landscape over the years. It helps users track the genre's temporal footprint and understand its evolving impact.

### Select Genre Panel (Left)

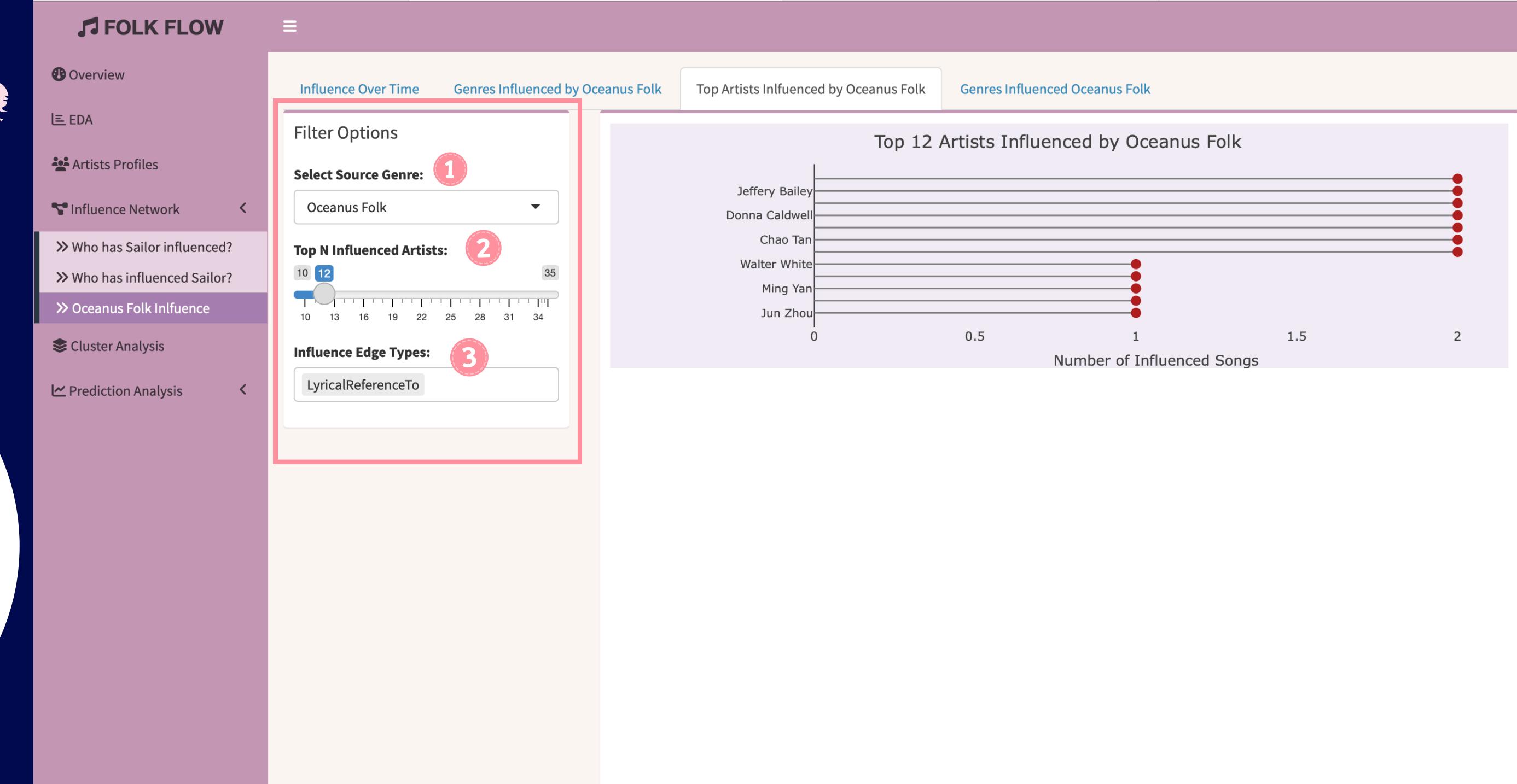
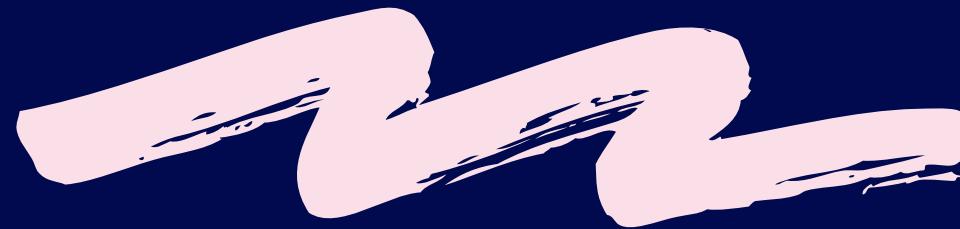
- **Dropdown Menu:**

- Users can select the genre of interest (default is Oceanus Folk).
- Designed for scalability to compare influence trends across other genres (if implemented).



# Oceanus Folk Influence

Top Artists Influenced by Oceanus Folk



This module highlights individual artists who have been most influenced by Oceanus Folk, allowing users to explore artist-level impact across the musical network.

## 1. Select Source Genre

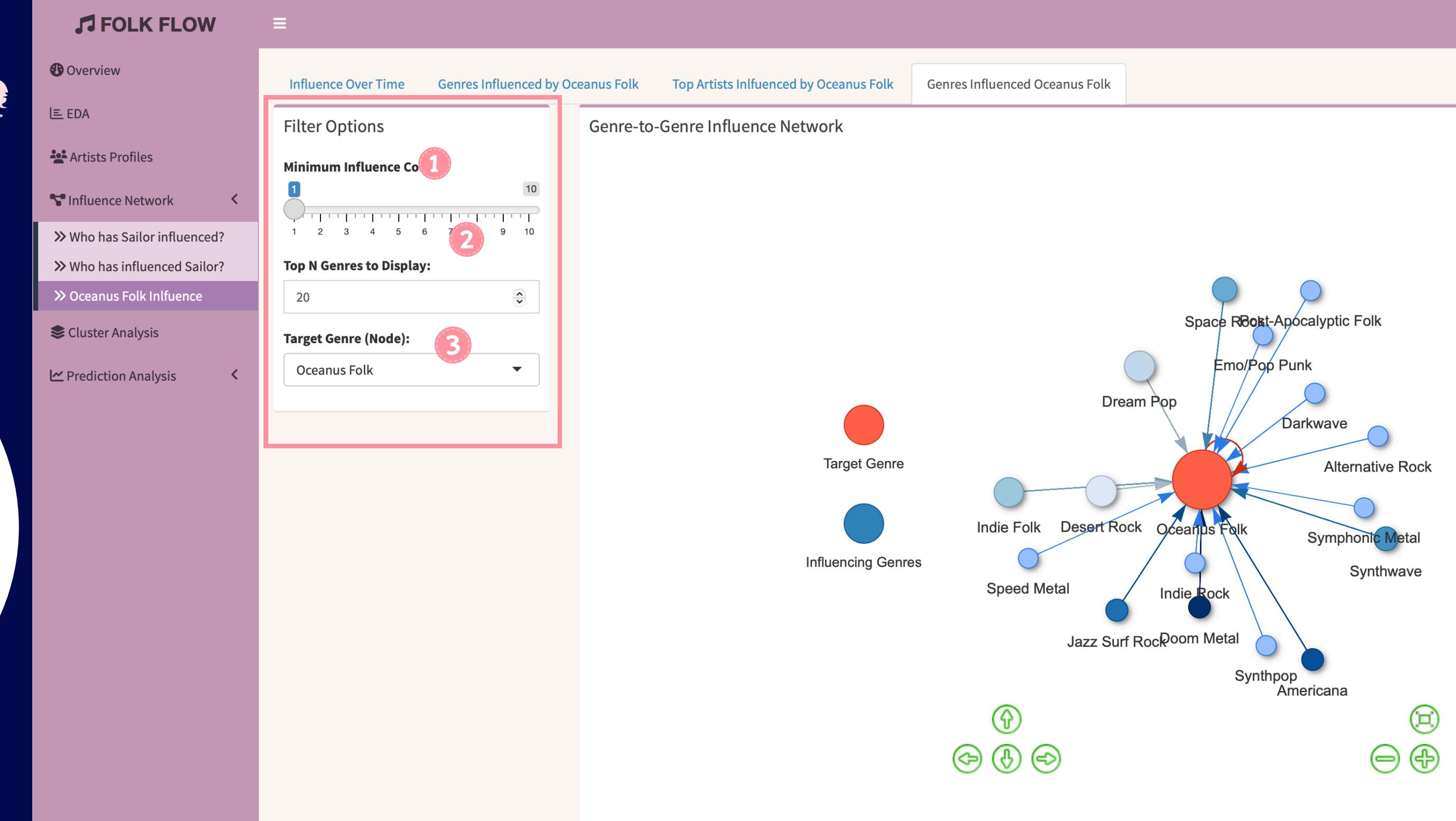
- Dropdown to choose the genre that acts as the influence source (default: Oceanus Folk).
- Useful if future support for other genres is enabled.

## 2. Top N Influenced Artists (Slider)

- Lets users choose how many top artists to display (e.g., Top 10, Top 35).
- Helps tailor the granularity of results for broad or focused analysis.

## 3. Influence Edge Types

- Text input or dropdown to specify the influence relationship type.



This module visualizes the genre-to-genre influence network centered on Oceanus Folk, helping users understand which genres have contributed to shaping Oceanus Folk over time.

### 1. Minimum Influence Count Slider

- Filters out low-impact relationships by setting a threshold for minimum number of influences. (Example: Set to 3 to only show genres that influenced Oceanus Folk at least 3 times.)

### 2. Top N Genres to Display Dropdown

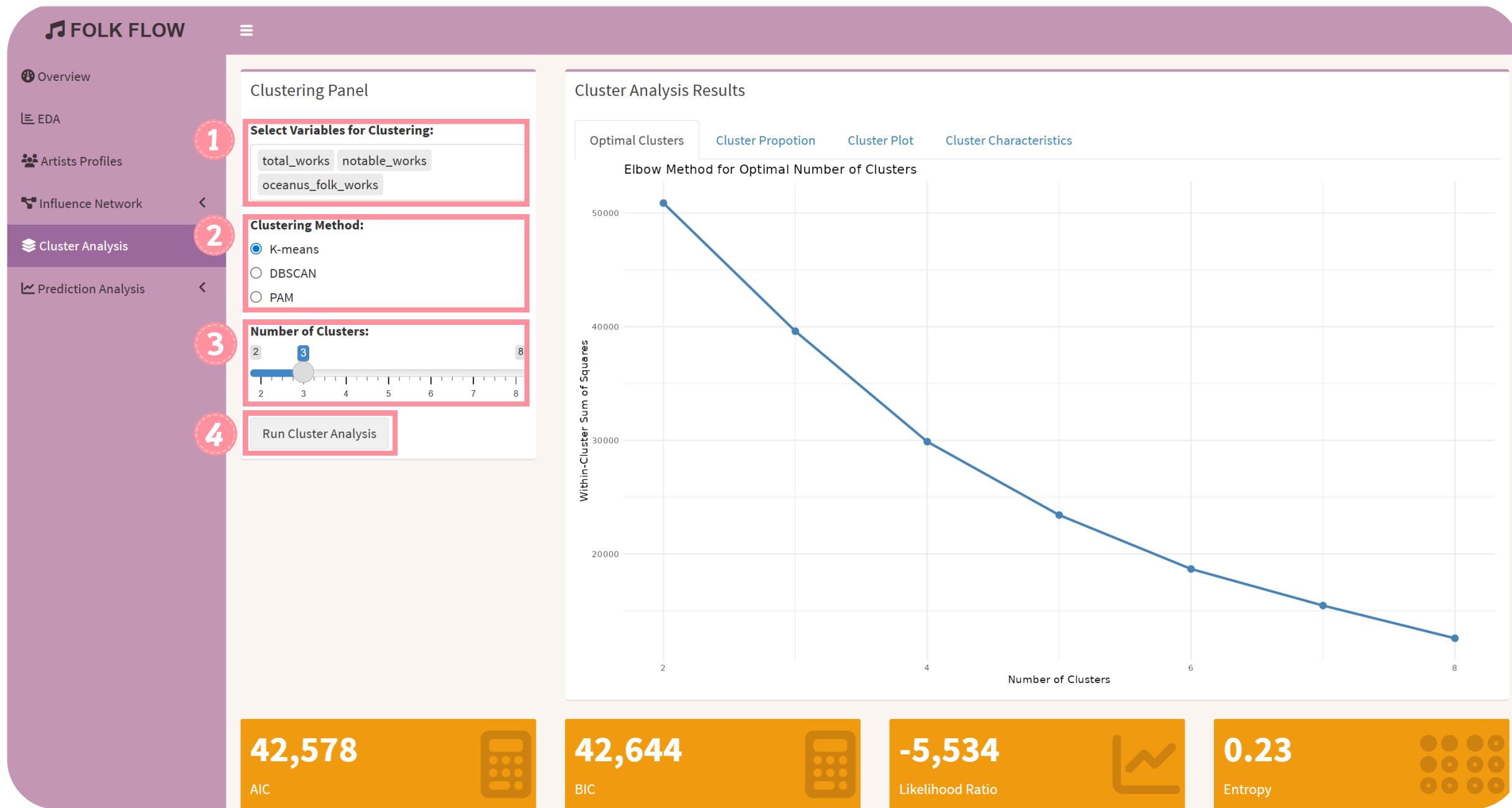
- Choose how many genres to include in the graph.
- Helps declutter the network and focus on the most impactful genres.

**3. Target Genre Selector:** Set the central genre to explore (default: Oceanus Folk).

# Cluster Analysis

## K-Means & PAM Clustering Method

This tab allows users to perform unsupervised clustering of artists based on selected musical attributes. It supports multiple clustering methods and provides rich visual and statistical outputs to interpret and evaluate clustering results.



### 1. Select Variables for Clustering

- Choose one or more variables to define artist similarity

### 2. Clustering Method

- Choose a clustering algorithm:
  - K-means: Groups artists by minimizing within-cluster variance.
  - DBSCAN: Detects dense clusters and isolates noise.
  - PAM: Robust clustering using representative medoids.

### 3. Number of Clusters

- (Applicable to K-means and PAM)
- Use the slider to choose the number of clusters.

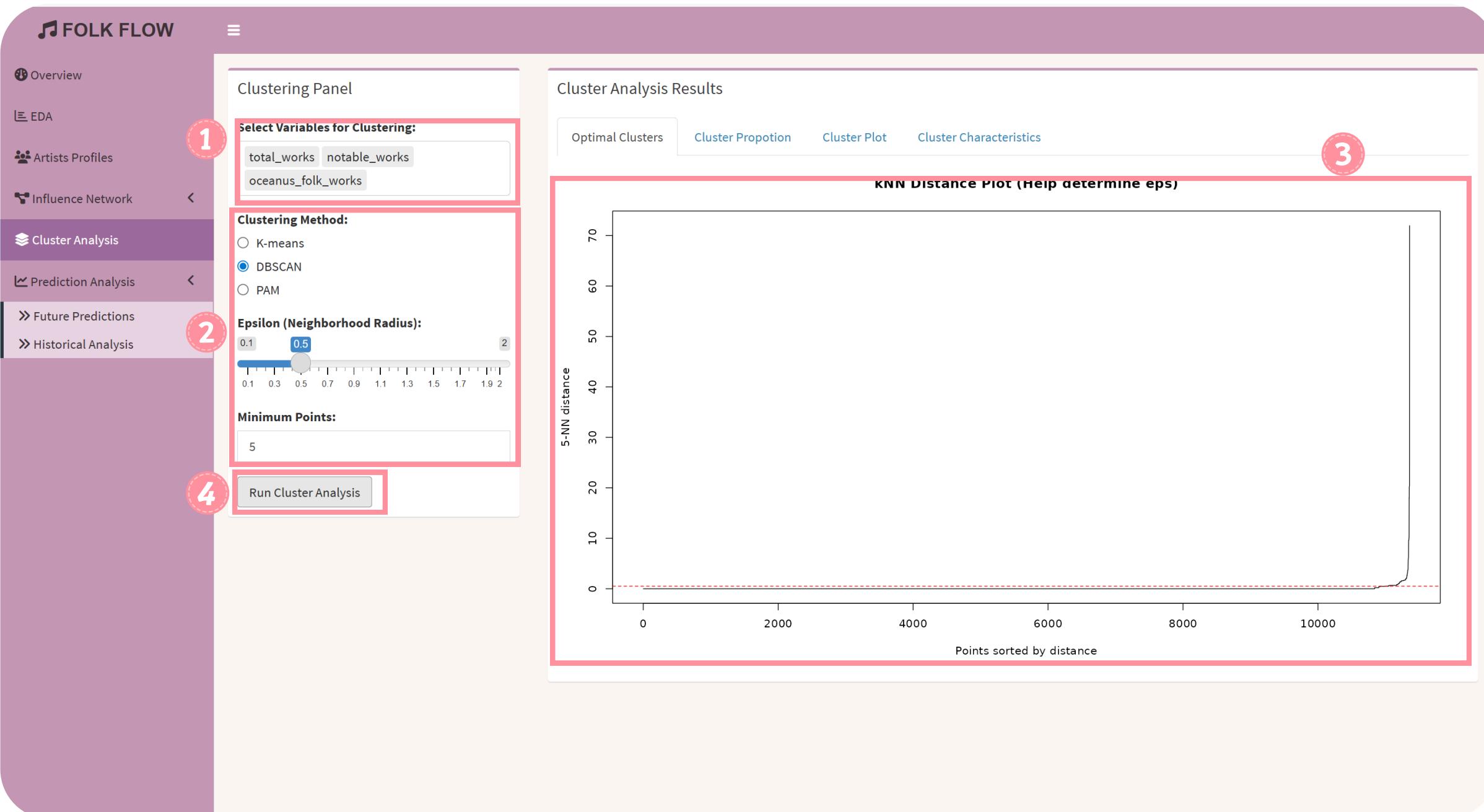
### 4. Run Cluster Analysis

- After setting or changing variables, you must click this button again to re-run the analysis and update the results.

**Note:** Any change to selected variables or parameters (epsilon or minPts) **requires re-running** the clustering using the **Run Cluster Analysis** button.

# Cluster Analysis

## DBSCAN Clustering Method



When the DBSCAN method is selected, the interface provides two key parameters and a k-NN distance plot to guide parameter tuning.

### 1. Select Variables for Clustering

- Choose one or more variables to define artist similarity

### 2. Set DBSCAN Parameters:

#### • Epsilon (Neighborhood Radius):

- Defines how close points must be to be considered part of a cluster. Use the slider to adjust.

#### • Minimum Points:

- Minimum number of points required to form a dense region (i.e., a cluster core).

### 3. kNN Distance Plot

- This plot shows the distances to each point's k-nearest neighbors. Look for the "elbow" point to guide selection of a suitable epsilon.

### 4. Run Cluster Analysis

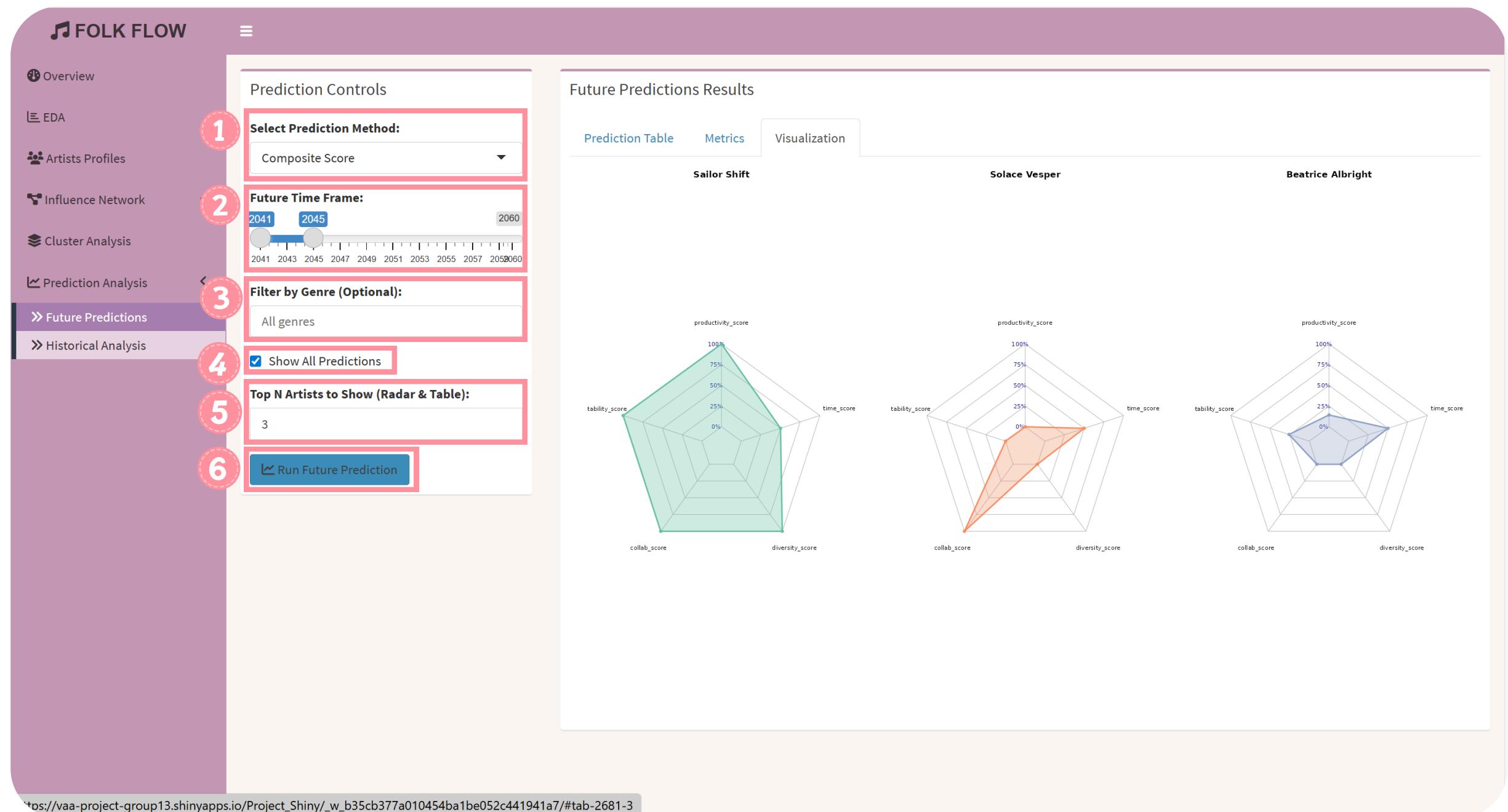
- After adjusting parameters, click the "Run Cluster Analysis" button to apply DBSCAN and generate cluster results.

**Note:** Any change to selected variables or parameters (epsilon or minPts) **requires re-running** the clustering using the **Run Cluster Analysis button**.

# PREDICTION ANALYSIS

## Composite Score Prediction Method

This tab provides future artist predictions using a selected method (e.g., Composite Score). The output includes a radar chart visualization of top predicted artists and their performance across dimensions such as productivity, diversity, and collaboration. This helps identify potential rising stars in upcoming years.



### 1. Select Prediction Method

- Choose how future performance is estimated.
  - Composite Score:** A weighted score based on multiple metrics like productivity, diversity, stability, etc.

### 2. Future Time Frame

- Use the slider to select the future period for prediction (e.g., 2041-2045).

### 3. Filter by Genre (Optional)

- Enter a genre name to focus predictions on a specific style (e.g., "Oceanus Folk"). Leave blank to include all genres.

### 4. Show All Predictions (checkbox)

- Checked:** Shows all predicted artists.
- Unchecked:** Filters to only those in the top N.

### 5. Top N Artists to Show (Radar & Table)

- Select how many top-predicted artists will be shown in the radar chart and prediction table.

### 6. Run Future Prediction

- After adjusting parameters, click this button to generate prediction results.

# PREDICTION ANALYSIS

## Growth Trajectory Prediction Method

This tab displays future artist predictions based on the Growth Trajectory method. Artists are ranked by the growth rate of their creative output over time, and the results include regression diagnostics such as slope, R<sup>2</sup>, and significance. It helps identify rising stars with accelerating artistic momentum.

**FOLK FLOW**

Overview EDA Artists Profiles Influence Network Cluster Analysis Prediction Analysis Future Predictions Historical Analysis

**Prediction Controls**

- Select Prediction Method: Growth Trajectory
- Minimum Data Points for Analysis: 5
- Show Individual Models
- Future Time Frame: 2041-2045
- Filter by Genre (Optional): All genres
- Show All Predictions
- Run Future Prediction

**Future Predictions Results**

Prediction Table Metrics Visualization CSV Excel Search:

Growth Model Diagnostics (Sorted by Growth Rate)

name	slope	r_squared	p_value	significance	total_works	notable_works	growth_tier
Rüdiger Graf	0.365	0.557	0.088	Not Significant	18	17	High Growth
Xiuying Yao	0.32	0.557	0.148	Not Significant	12	11	High Growth
Roy Tschentscher	0.284	0.426	0.233	Not Significant	9	9	High Growth
Qiang He	0.278	0.451	0.214	Not Significant	10	10	High Growth
Emily Nelson	0.214	0.356	0.288	Not Significant	10	10	High Growth
Eugenia Mitschke	0.175	0.621	0.012	Significant	15	15	High Growth
Samuel Rogers	0.152	0.71	0.073	Not Significant	7	7	High Growth
Jie Tao	0.147	0.613	0.117	Not Significant	8	8	High Growth
Kathryn Golden	0.138	0.237	0.327	Not Significant	9	8	High Growth
Bekir Bruder	0.128	0.194	0.458	Not Significant	18	18	High Growth
Na Zhou	0.127	0.365	0.151	Not Significant	12	11	High Growth

Showing 1 to 11 of 281 entries

### 1. Select Prediction Method

- Choose "Growth Trajectory" to analyze future trends using linear growth modeling.

### 2. Minimum Data Points for Analysis

- Set the minimum number of works required for an artist to be included in the prediction (e.g., 5 data points for fitting a linear model).

### 3. Show Individual Models (Optional)

- Check this box to display individual growth trend visualizations for each artist (shown in the Visualization tab).

### 4. Future Time Frame

- Use the slider to set the forecast period (e.g., 2041-2045).

### 5. Filter by Genre (Optional)

- Focus predictions on a specific genre (e.g., "Oceanus Folk") or leave blank to include all.

### 6. Show All Predictions

- Checked: Display all valid artists.
- Unchecked: Filter to Top N results.

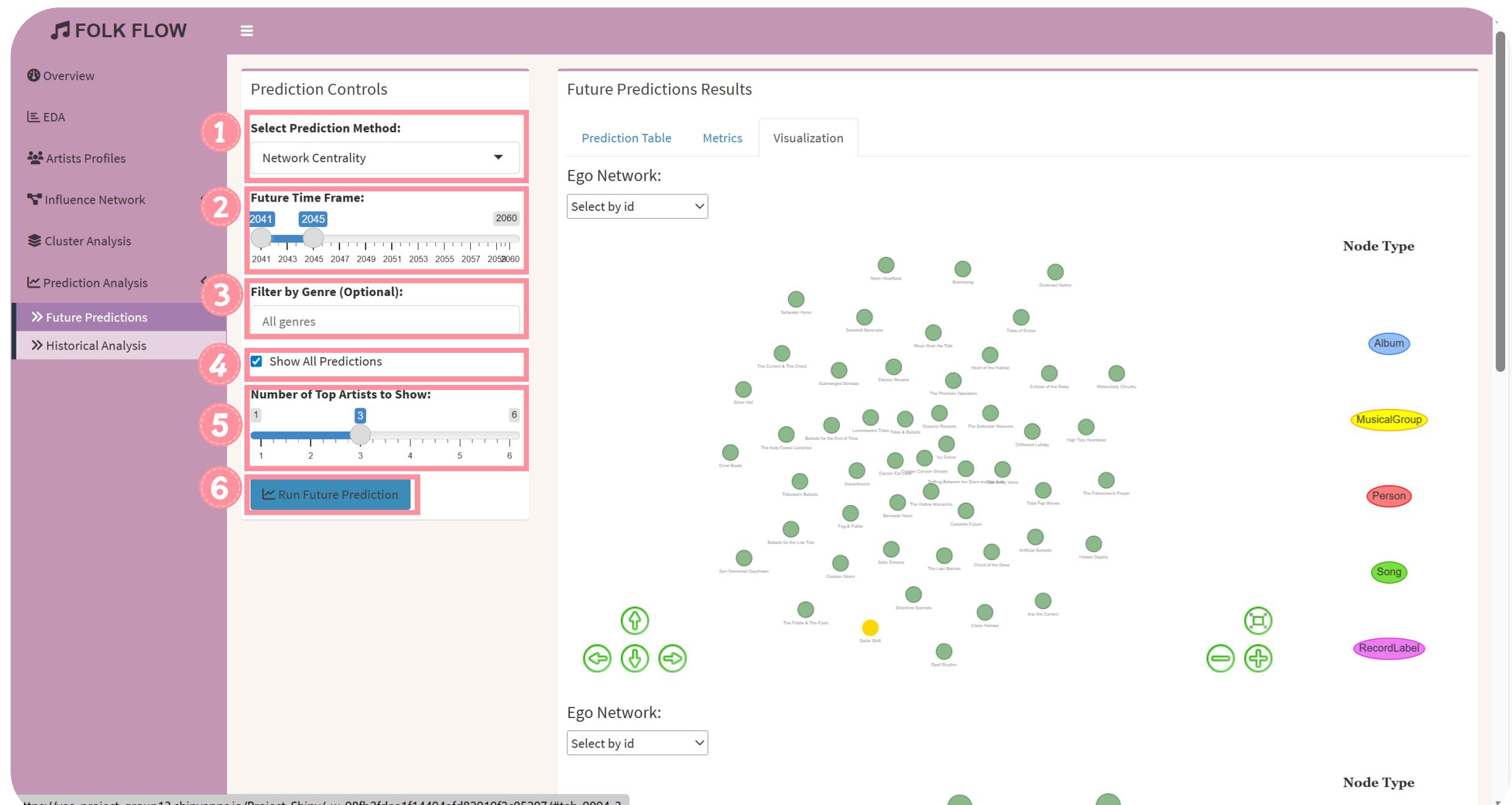
### 7. Run Future Prediction

- After any changes, click this button to refresh and display the updated prediction results.

# PREDICTION ANALYSIS

## Network Centrality Prediction Method

This tab presents future artist predictions based on Network Centrality, identifying artists who are likely to become influential based on their position within the collaboration or content network. The visualization displays the ego networks of the top predicted artists, helping users explore their direct and indirect connections to other musical entities.



[https://vaa-project-group13.shinyapps.io/Project\\_Shiny/\\_w\\_98fb2fdea1f14494af82919f2c05207/#tab-9094-3](https://vaa-project-group13.shinyapps.io/Project_Shiny/_w_98fb2fdea1f14494af82919f2c05207/#tab-9094-3)

### 1. Select Prediction Method

- Choose "Network Centrality" to rank future artists based on network influence (e.g., centrality scores in the artist graph).

### 2. Future Time Frame

- Use the slider to specify the time period for future prediction (e.g., 2041-2045).

### 3. Filter by Genre (Optional)

- Enter a specific genre to narrow predictions to that category, or leave blank to include all.

### 4. Show All Predictions

- Checked:** Show all valid predicted artists.
- Unchecked:** Display only the top N artists.

### 5. Number of Top Artists to Show

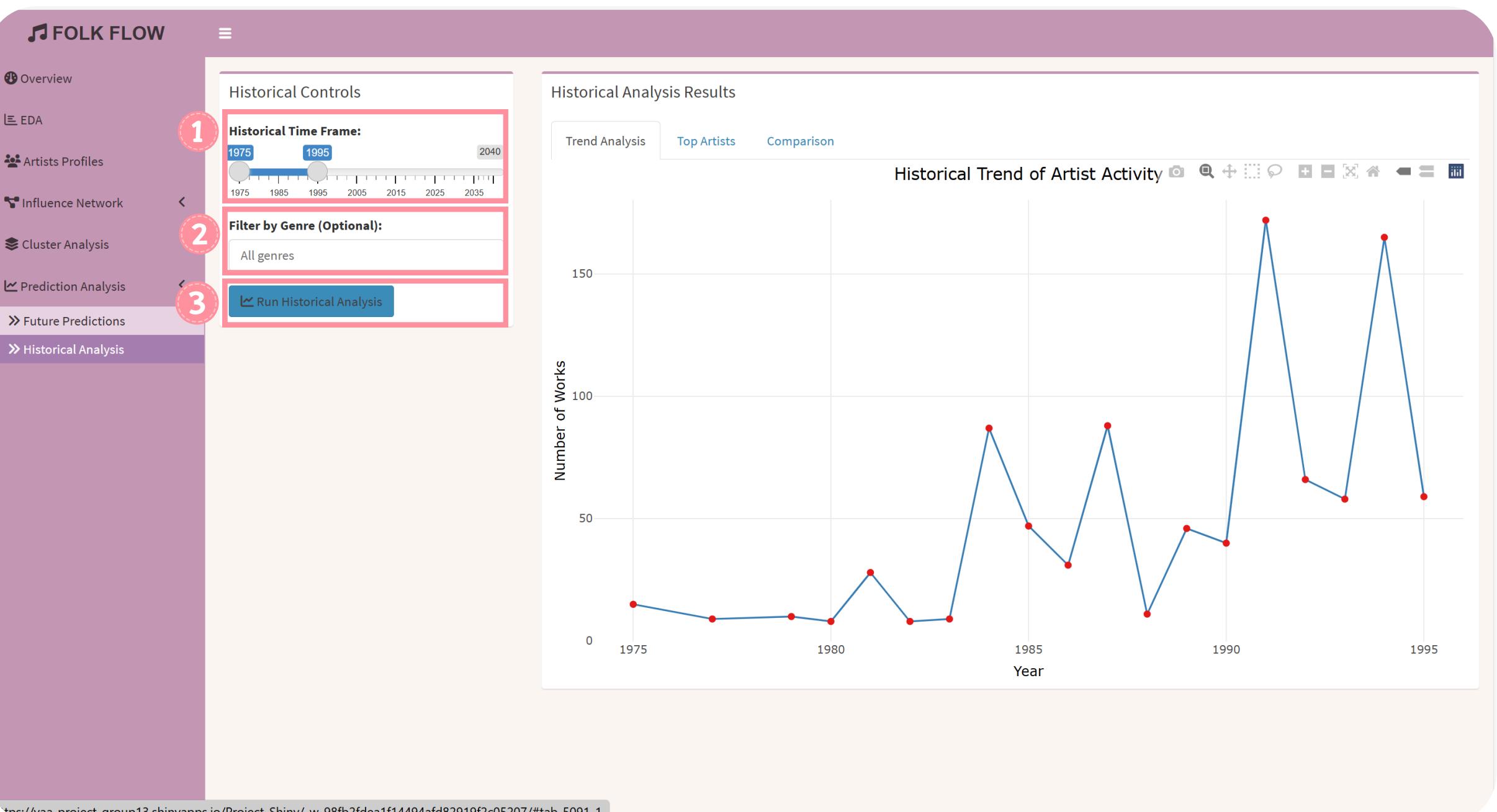
- Use the slider to define how many top-predicted artists to visualize (1-6). This affects the radar/table and the ego network view.

### 6. Run Future Prediction

- Click this button after adjusting any settings to update the prediction output.

# HISTORICAL ANALYSIS

This tab displays the historical trend of artist activity over a selected time range. The line chart visualizes the number of musical works released each year, helping users identify peaks and shifts in creative output across time.



## 1. Historical Time Frame

- Use the slider to set the period of interest (e.g., 1975–1995). The chart will update to reflect the number of works produced in each year within that range.

## 2. Filter by Genre (Optional)

- Enter a specific genre to limit the analysis to that style (e.g., "Oceanus Folk"), or leave blank to include all genres.

## 3. Run Historical Analysis

- After adjusting the time frame or genre, click this button to update the chart with the filtered data.

# Folks Flow

**THANK YOU FOR WATCHING**