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WESH: Web-based Exploration of Stars and their History

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Abstract

The VAST Challenge 2025 presents a scenario in which music journalist Silas Reed investigates the evolution of Oceanus Folk and the career of Sailor Shift, an artist whose rise has brought global attention to a genre once confined to its island origins. To support this investigation, we developed WESH (Web-based Exploration of Stars and their History) a visual analytics system that combines knowledge-graph modeling with interactive visualizations of influence, collaboration, and genre dynamics. Our approach enables multifaceted analysis of artist trajectories and genre development over time. Through different views and temporal filtering, users can investigate patterns of collaboration, trace influence paths, and explore the changing role of Oceanus Folk within the wider music ecosystem.

Index Terms: VAST Challenge 2025, Mini-Challenge 1, Visual Analytics, Knowledge Graphs, Influence Analysis, Oceanus Folk.

1 Introduction

The VAST Challenge 2025 focuses on the analysis of Sailor Shift's career and the growing influence of Oceanus Folk, a genre that has gained international traction in recent years. We address this scenario in the context of Mini-Challenge 1 (MC1), which is based on a large knowledge graph containing musical artists, releases, genres, collaborations, and influence relations.

To support music journalist Silas Reed in analyzing this evolving musical landscape, we address the following questions:

- **Q1:** How has Sailor Shift's influence evolved over time, and who has she collaborated with or inspired?
- **Q2:** How has the Oceanus Folk genre spread through the broader music world, and how has it changed in turn?
- **Q3:** What defines a rising Oceanus Folk artist, and who are likely to become future stars?

To answer these questions, we developed a visual analytics (VA) system that allows users to extract, explore, and analyze focused subgraphs derived from the larger dataset, alongside other visualizations that capture complementary aspects of the data. Rather than presenting the entire knowledge graph, our tool enables the creation of contextual, task-specific views, for instance, centered around individual artists, influence paths, or genre transitions.

The system supports exploratory analysis of artistic careers, genre diffusion, and collaboration patterns over time. It serves as a tool for data-driven storytelling and facilitates deeper insight into the mechanisms shaping Oceanus Folk's ongoing development.

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Figure 1: Analysis interface tabs for exploring the dataset.

2 Data

The dataset for this challenge is provided by the VAST Challenge 2025, Mini-Challenge 1. It consists of a large synthetic knowledge graph that models the careers and relationships of people in the music industry. The graph includes 17,412 nodes and 37,857 edges, representing entities such as artists, songs, albums, groups, and record labels.

Relationships in the graph capture various types of musical interaction, including artistic contributions to songs and albums, professional affiliations, and stylistic or lyrical influences between works. The dataset enables the exploration of how music is created, connected, and transformed across time and genres.

3 Application / Analysis Approach

Our approach combines a set of coordinated visualizations, mostly created with D3.js [1], designed to support exploration of influence patterns, artistic collaborations, and genre development in the Oceanus music scene. Rather than exposing the entire knowledge graph at once, users can extract focused subgraphs by creating tabs (see Figure 1) that center on artists, genres, or time periods.

The system is organized around three analytical perspectives:

- **Artist, Influence, Collaboration, and Career:** Visualizations in this category focus on tracing artist relationships, influence paths, and career developments over time.
- **Genre Development and Influence:** These views reveal how Oceanus Folk has interacted with other genres, both as a source and recipient of stylistic influence.
- **Rising Star Analysis:** This perspective highlights artists whose trajectories resemble known success patterns, supporting predictions of future Oceanus Folk figures.

Together, these perspectives allow users to examine the musical ecosystem from multiple angles, following artistic development, uncovering influence structures, and identifying emerging talent.

4 Findings

4.1 Q1: Sailor Shift's influence and collaborations

A — Sources of influence.

The influence graph centered on Sailor Shift shows many incoming influence paths with no single dominant source (Figure 2). Two musical groups (*The Saltwater Weavers* and *The Fiddle & The Flood*) connect directly to her; other paths typically traverse intermediate songs or albums. This pattern suggests a synthesis of diverse stylistic inputs rather than a single leading figure.

B — Collaborations and direct/indirect influence.

Reversing edge direction reveals that Sailor Shift directly influences only two musical groups, with no extended cascades originating solely from her works. Her impact is expressed primarily through collaborations. Most of these collaborations occurred on

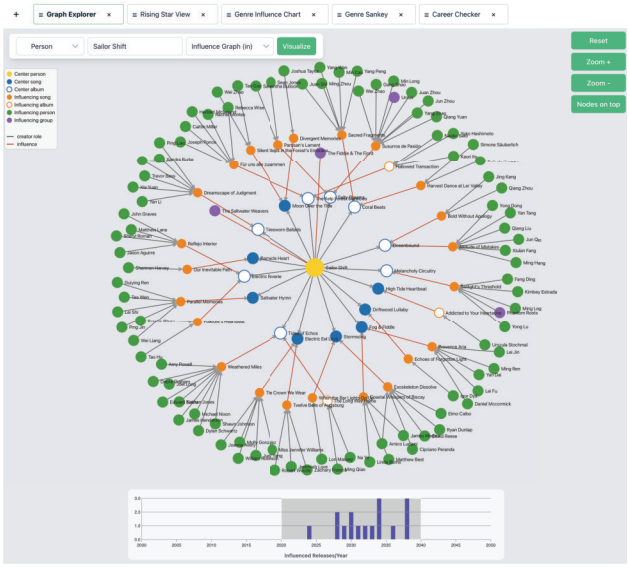

Figure 2: Sailor Shifts collaborations.

her albums, with only one exception: the single *Seashell Serenade*. This pattern highlights her role as a central connector who brings other artists into the Oceanus Folk spotlight.

C — Influence within the Oceanus Folk community.

Several artists began their credited careers with a collaboration alongside Sailor Shift (e.g., *Beatrice Albright* or *Daniel O'Connell*). *Rusty Riggins* is a notable case: after an early solo phase in Sea Shanties, he returned to prominence in the 2020s through two Oceanus Folk collaborations, one of them with Sailor Shift. Such cases illustrate her function as both an entry point for emerging artists and a re-integration channel for established musicians within the Oceanus Folk network.

4.2 Q2: Spread and transformation of Oceanus Folk

A — Gradual rise followed by a temporary Hype.

Time-series metrics show a marked rise in outgoing influence edges from around 2017, peaking around 2023. With a later decline in new Oceanus Folk releases, cross-genre influence fall back to a before 2010 level. Gaussian kernel smoothing confirms the baseline trend and tempers periodic three-year peaks.

B — Broad Influence across Genres and Artists

The Sankey diagram in Figure 3 shows that Oceanus Folk indicates its strongest influence towards *Dream Pop*, *Indie Folk*, *Desert Rock*, and *Space Rock*. Some of the most influenced Artists are *Yong Shen*, *Xiuying Li* and *Lei Jin*.

C — Contemporary influences on Oceanus Folk.

The heatmap shows, that Oceanus Folk has drawn particularly strong influence from *Indie Folk* and *Synthwave*, with consistently high incoming connections from both genres. These links suggest that Oceanus Folk tries to shape its sound in a modern direction.

4.3 Q3: Rising-star profile and forecasts

A — Comparing different career trajectories.

The Career View (Figure 4) summarizes release activity, genres, and collaborations to compare artist trajectories. *Szymon Pyć* shows a long career consisting solely of notable songs. *Kimberly Snyder* spans multiple top genres and stands out for her high number of collaborations. *Sailor Shift* focuses almost entirely on Oceanus Folk while maintaining a consistently high release volume.

B — Predicting rising stars within a genre.

The Rising Star View (Figure 5) ranks artists in a selected genre by their likelihood of becoming the next major figure, based on

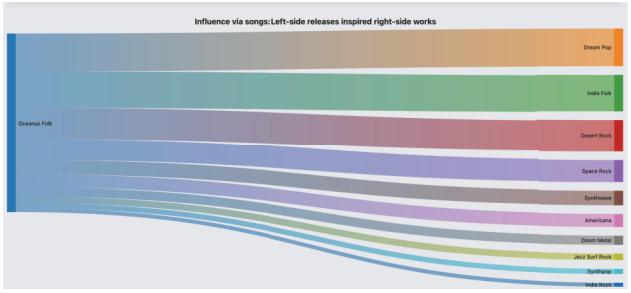

Figure 3: Oceanus Folk's influence on other Genres.

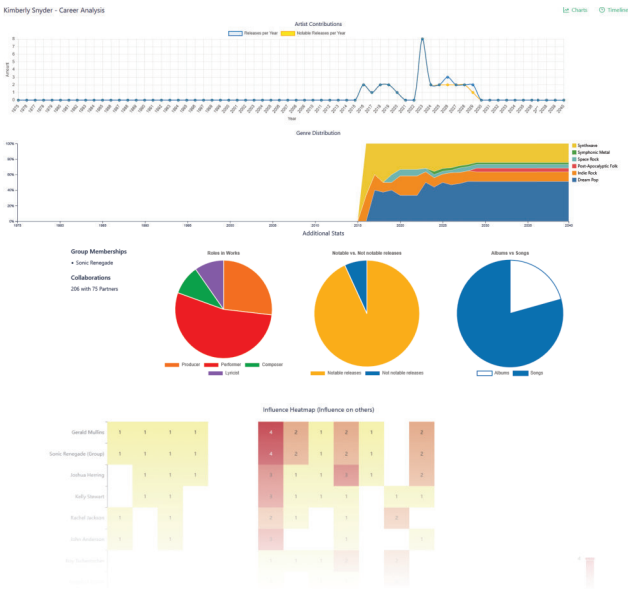

Figure 4: Career-View of Kimberly Snyder.

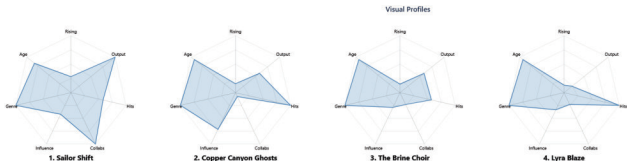

Figure 5: Rising-Star spider charts for Oceanus Folk.

factors such as output, hit density, influence, and genre focus. In the Oceanus Folk setting, this prediction highlights *Sailor Shift*, the *Copper Canyon Ghosts* and the *Brine Choir* as top candidates. The view enables comparisons across artists and timeframes, supporting data-driven forecasts of emerging talent.

5 Conclusion

We demonstrate that combining knowledge-graph analytics with tailored visualizations can illuminate the complex influence dynamics of modern music careers. For music journalist Silas Reed, the system offers concrete evidence to support his *Oceanus Folk: Then-and-Now* narrative and delivers data-driven forecasts of future genre stars.

References

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