Game of the Year 2023 Livestream Analysis

Introduction

This report analyzes the audience sentiment and engagement from the official Game of the Year 2023 Livestream held on December 8th, 2023. Using data collected from YouTube comments and applying sentiment analysis tools like VADER and BERTopic, we provide insights into viewer reactions, key discussion topics, and engagement trends.

Data Description

Video: THE GAME AWARDS 2023: Official 4K Livestream (Monster Hunter Marvel's Blade Light No Fire)
Link: https://www.youtube.com/watch?v=Zu2z5M4gmno
Number of comments collected: 4312
Data collected on: 3rd September 2024

Analysis

Sentiment Analysis

By applying VADER (Valence Aware Dictionary and sEntiment Reasoner), all comments were divided into three categories: positive, neutral, and negative.

Sentiment Distribution:
- 55.91% of the comments are positive, suggesting that almost half of the audience had a favorable reaction to the event.
- 22.87% of the comments are neutral, indicating that about one-third of the audience didn't express a strong opinion.
- 21.22% of the comments are negative, showing that a smaller portion of the audience was dissatisfied.

Likes Distribution

71.62% of the total likes are attributed to positive comments, showing that positive sentiments are highly favored by the audience. Meanwhile, 17.02% of the total likes go to neutral comments, and only 11.36% go to negative comments. This implies that neutral or negative feedback generally doesn't resonate as well with the audience.

Engagement (Likes per comment)

Positive comments receive an average of 16.22 likes, significantly higher than other sentiments. Neutral comments receive an average of 9.42 likes, and negative comments slightly more at 6.77 likes. Interestingly, despite having fewer overall likes, negative comments show a marginally higher average engagement than neutral ones.

Trend Analysis

The chart (Figure 4) presents the average sentiment score over time, ranging from -1 (very negative) to +1 (very positive), covering the period from 28th November 2023 to 10th September 2024. The early data (5th December 2023 to 30th January 2024) shows highly fluctuating sentiments with a peak period of engagement. However, as time progresses, sentiment scores stabilize, with most reactions leaning towards neutral or positive.

Topic Modelling

Topic Word Scores

Using BERTopic, key topics were identified in the comments. Below are the top 4 topics identified by the pre-trained models: (see figure 5, 7, 9)

Top 4 topics identified by pre-trained model ("all-MiniLM-L6-v2"):

- **Topic 0**: General Game Discussion

- **Topic 1**: Spider-Man-related Discussion

- **Topic 2**: Baldur's Gate and Game of the Year (GOTY)

- **Topic 3**: Flute Guy and Game-Related Commentary

Top 4 topics identified by pre-trained model ("all-mpnet-base-v2"):

- **Topic 0**: General Game Discussion

- **Topic 1**: Flute Guy Discussion

- **Topic 2**: Spider-Man-related Discussion

- **Topic 3**: Orchestra and Theme Discussion

Top 4 topics identified by BERTopic's default pre-trained model:

- **Topic 0**: General Game Discussion

- **Topic 1**: Spider-Man-related Discussion

- **Topic 2**: Baldur's Gate and GOTY Discussion

- **Topic 3**: Flute Guy Discussion

Intertopic Distance Map

For the three maps: (see figure 6, 8, 10)

- Each map shows a varying degree of topic separation and topic distribution.

- Some maps have tightly clustered topics (e.g., the third image, where most topics are close to the bottom right), while others show more distinct topic groupings.

- The number of topics and their relative dominance (bubble sizes) also change slightly between the maps.

Conclusion

The Game of the Year 2023 Livestream garnered a largely positive audience response, with positive sentiment dominating the conversation. Viewer engagement was strongest around favourable comments, reflecting an overall positive reception. Over time, reactions stabilized, trending towards neutral and positive views.

Key topics identified through topic modelling highlighted discussions around popular games like Spider-Man and Baldur's Gate, as well as memorable moments such as the "Flute Guy" performance. Overall, the event resonated well with the audience, fostering enthusiastic and engaging discussions.

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    Sentiment  Count  Likes  Count_Percent  Likes_Percent  Engagement
0   Positive   2411   39099     55.913729      71.624320    16.216922
1    Neutral    986    9291     22.866419      17.019912     9.422921
2   Negative    915    6199     21.219852      11.355768     6.774863
```
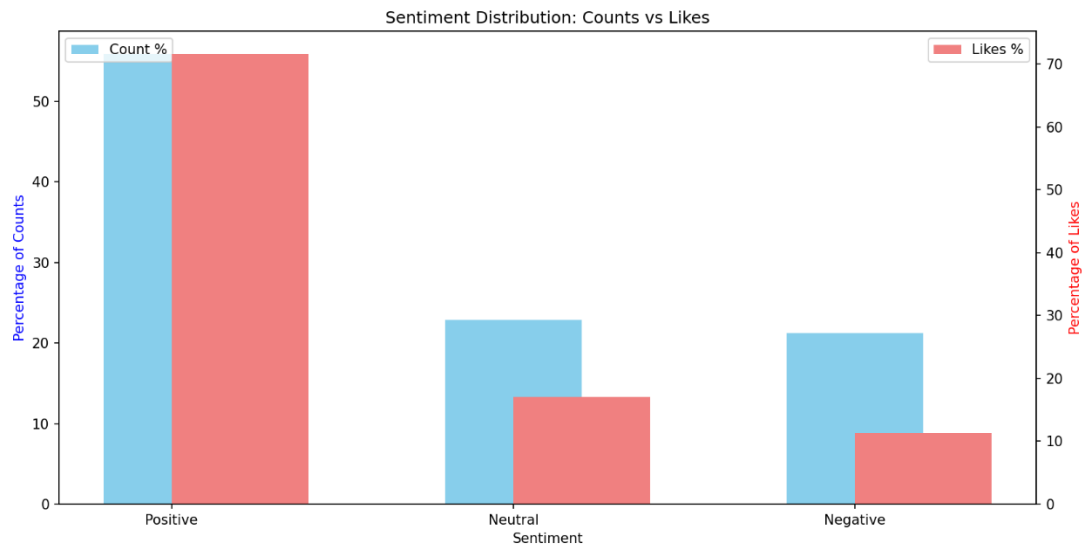
Figure1. Sentiment analysis result

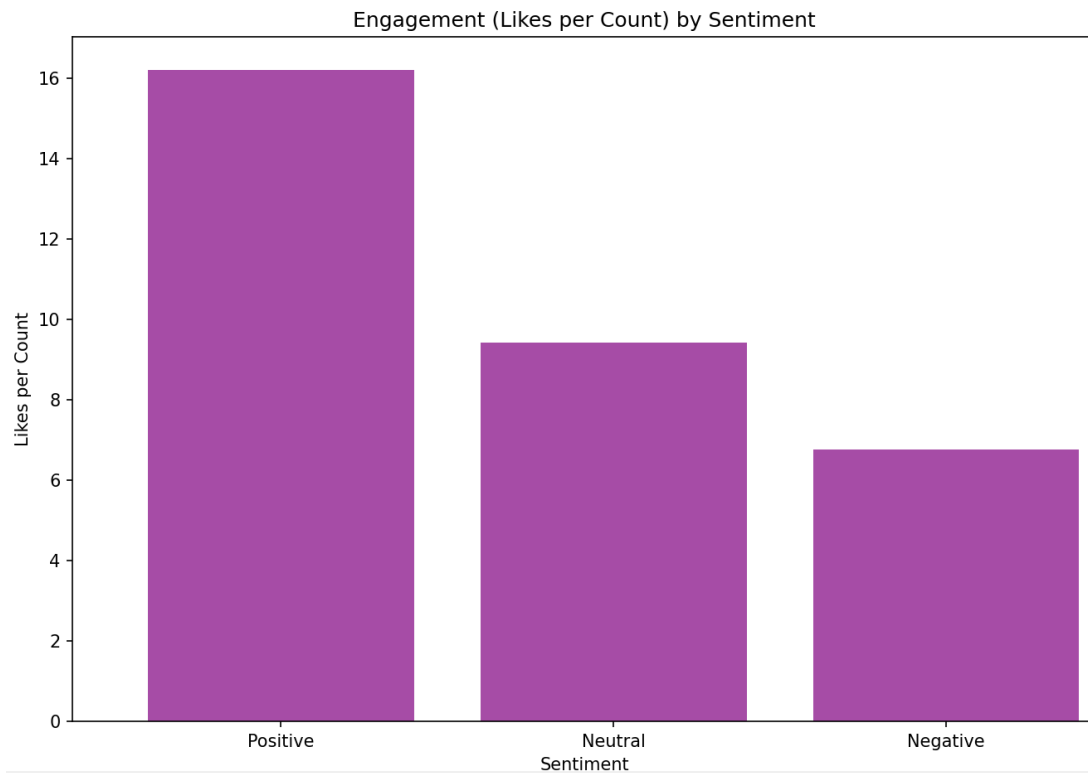Figure 2. Bar chart for Sentiment Distribution: Counts vs Likes

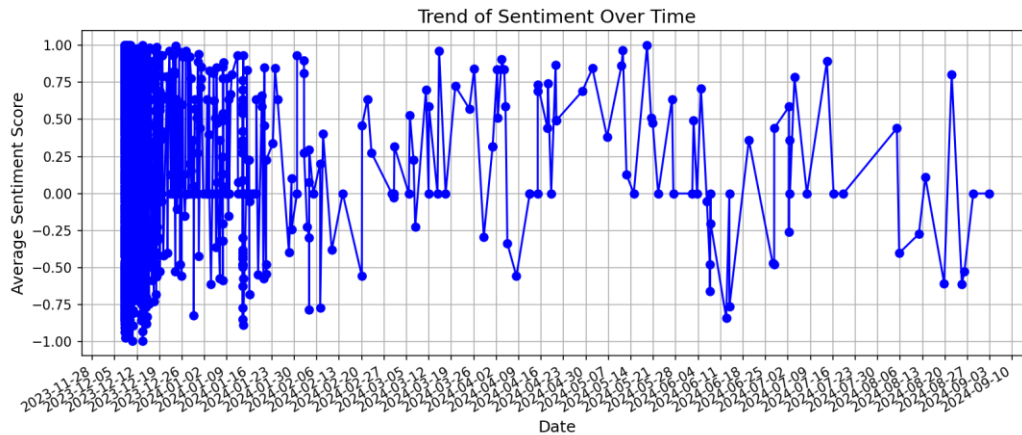Figure 3. Bar chart for Engagement (Likes per Count) by Sentiment

Figure 4. Line graph for Trend of Sentiment Over Time
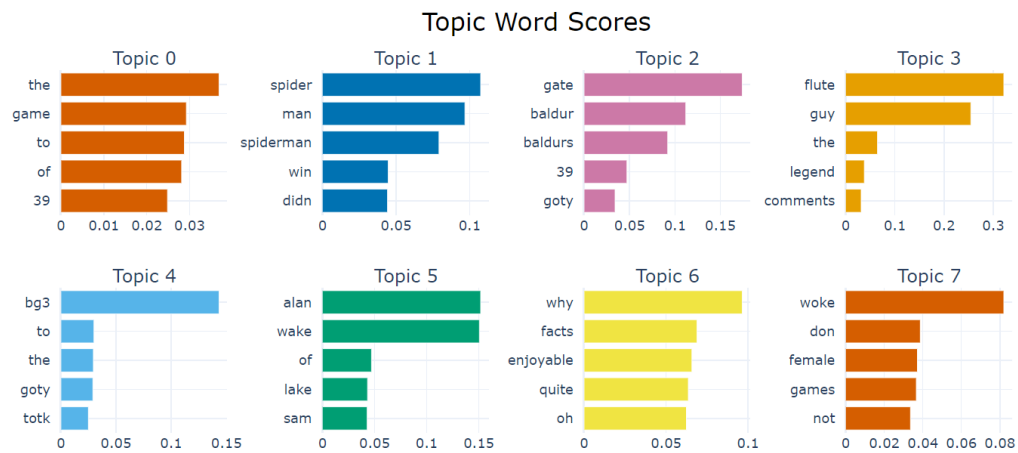
Figure 5. Topic Word Scores ("all-MiniLM-L6-v2")
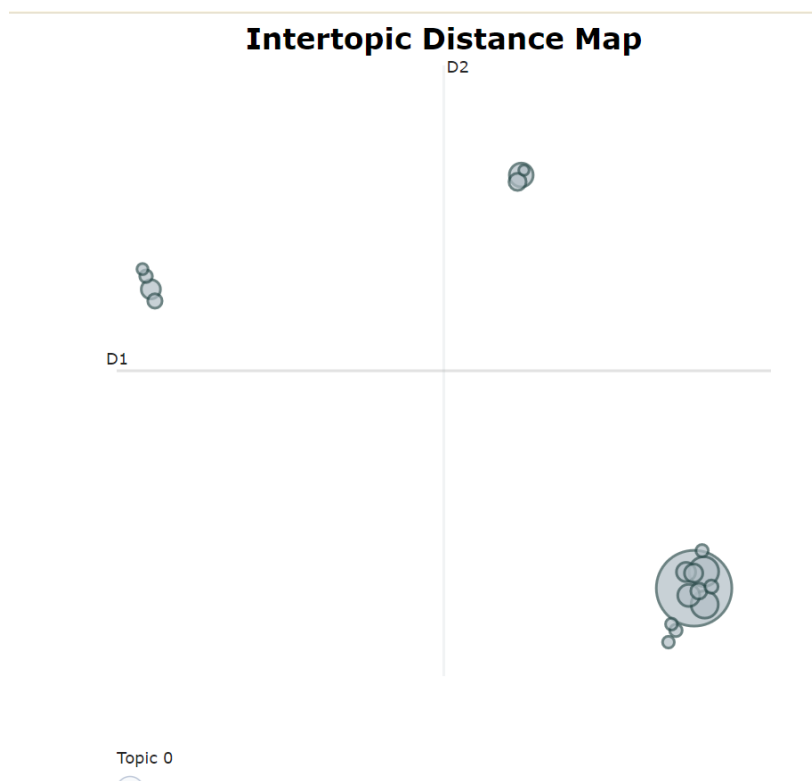
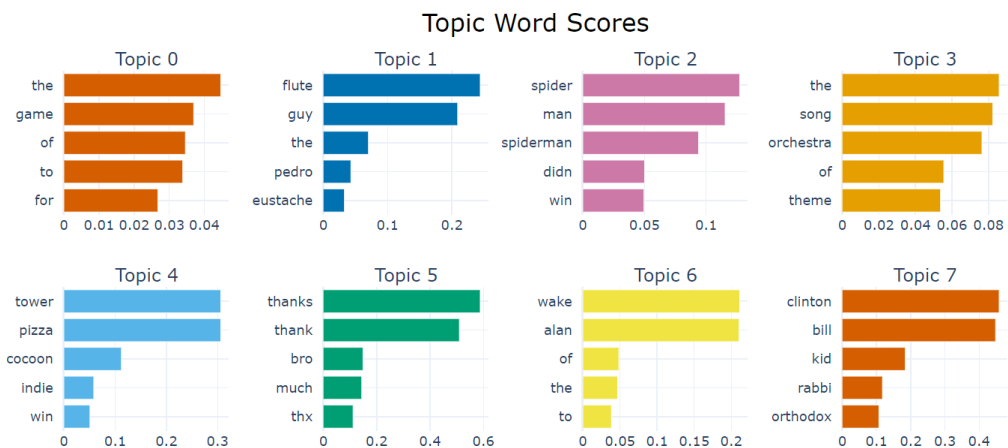Figure 6. Intertopic Distance Map ("all-MiniLM-L6-v2")
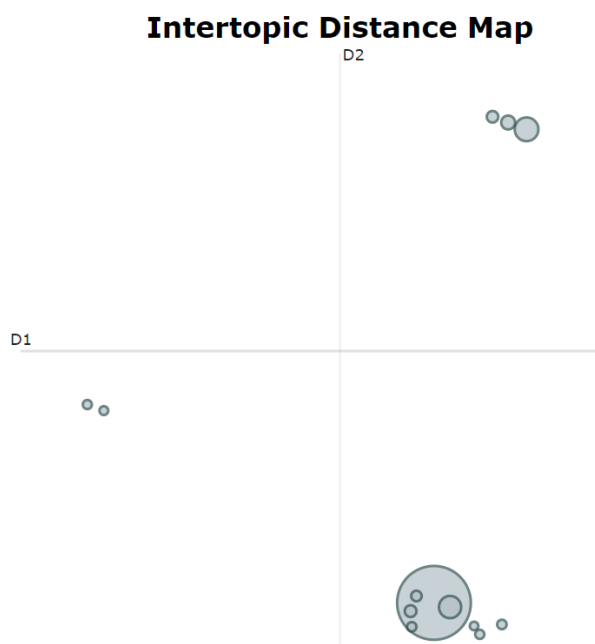
Figure 7. Topic Word Scores ("all-mpnet-base-v2")

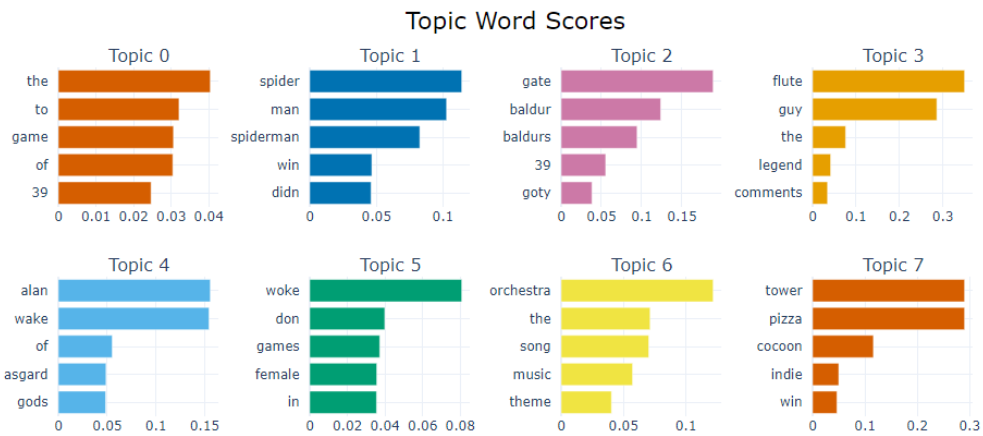Figure 8. Intertopic Distance Map ("all-mpnet-base-v2")
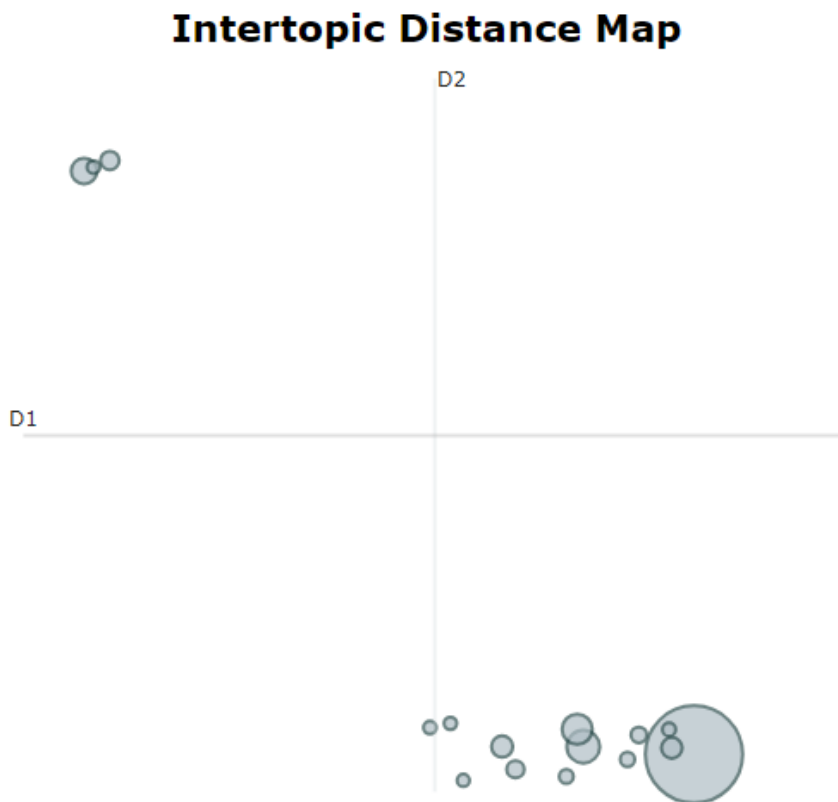
Figure 9. Topic Word Scores (BERTopic's default)

Figure 10. Intertopic Distance Map (BERTopic's default)