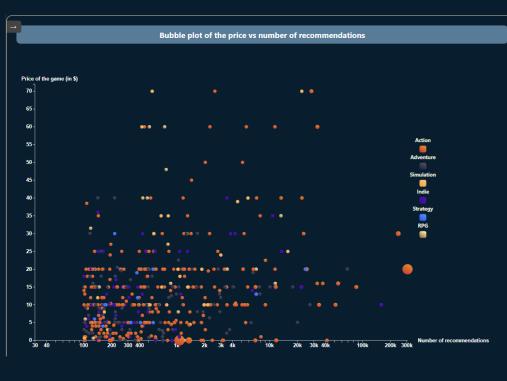
## Mapping Trends and Dynamics in the Video Game Industry: Insights Through Data and Visualizations

CS5346 - S2 AY2024/25

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#### **Studio-Genre Hairball**

This interactive network graph offers an engaging way to explore Steam's game catalogue. Each **node** represents a game, and the **color** indicates its genre. Links are drawn between games developed by the same studio, helping to highlight clusters of productions.



#### **Price Plot**

This bubble plot highlights the distribution of games according to their price and the number of recommendations. We can observe that most games are priced below \$20, and only a few receive more than 3000 recommendations. The most played and recommended games were action games.

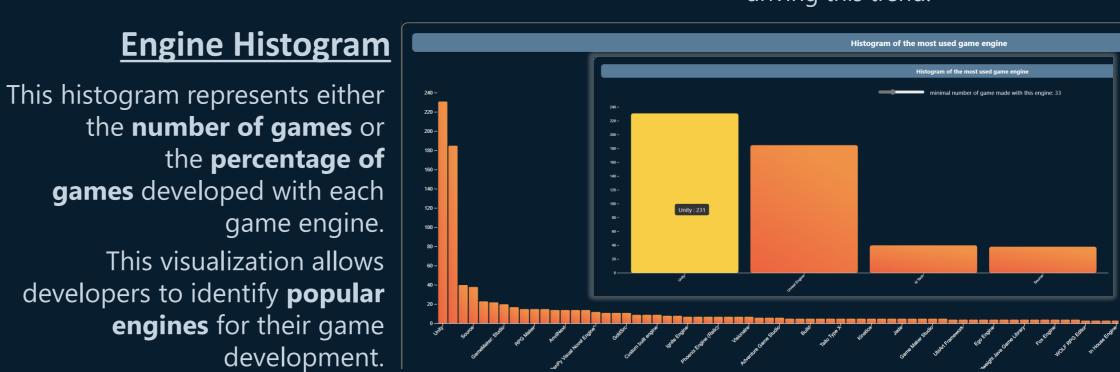
## **Popularity Trends**

This first set of visualizations comes from an application we developed to explore key trends in the video game industry, including the evolution of genres, studio contributions, pricing fluctuations, and the rise of Indie games. Indie games, driven by accessible tools like Unity and Unreal Engine, have gained prominence, reshaping the market. The visualizations highlight genre trends, market dynamics, and user engagement, offering insights for gamers and developers alike.



#### **Genre Release Bar Chart**

This chart shows the number of games released per genre during the selected period, highlighting the dominance of indie games in recent years. The rise of free and accessible tools like Unity and Unreal Engine has empowered individuals to create and publish their own games, driving this trend.

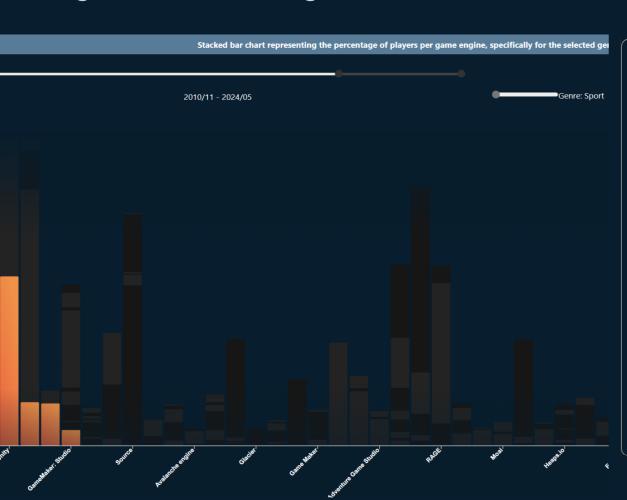


Line Chart representing the number of steam user over time

#### **Engine Popularity Stacked-**

#### **Histogram**

This stacked bar chart represents the percentage of players per game engine, specifically for the selected selected genre. The percentage is averaged over the selected time range. This visualization is a powerful tool 55for **Game developers**, who can  $\frac{5}{40}$ assess which engine is most suitable for the type of game they want to ; build; and **engine developers**, who gain insights into how their tools are being used in relation to game genres.



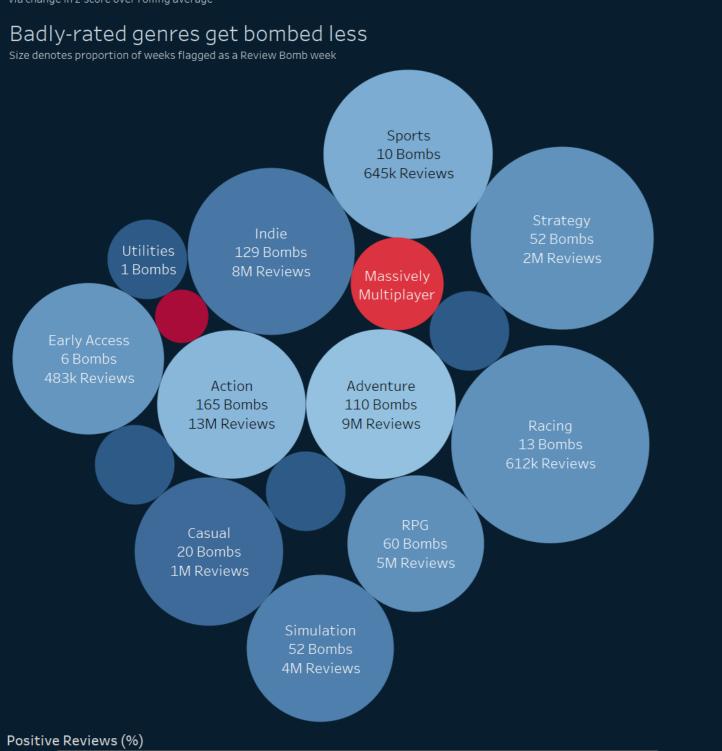
#### Players count over time

This line chart highlights the constant increase in the popularity of Steam as a game marketplace. Thanks to **SteamDB**, user data is easily retrievable — unlike for other platforms like Epic Games, Origin, or Instant Gaming.

Review Sentiment

### **Review Sentiment and Review Bombing**

#### **Review Bombs**



In addition to the trends explored in our application, we investigated review sentiment and review bombing on the Steam store.

We first examined factors influencing negative reviews, visualized through stacked bar charts. Microtransactionheavy genres, such as Free to Play and Massively Multiplayer, had a significantly higher share of negative reviews. In contrast, genres for applications rather than games were reviewed much more positively. For languages, Chinese, Japanese, and Korean reviews showed the highest negative sentiment compared to others, potentially reflecting cultural or regional differences in expectations.

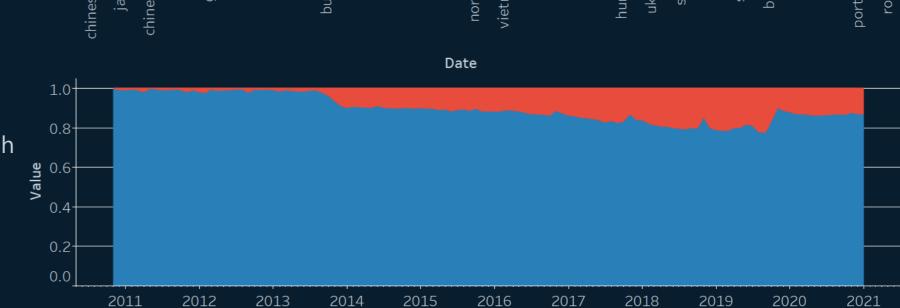
A stacked area chart complements these findings by showing the proportion of negative reviews over time. While negative sentiment has gradually increased, a slight positive shift occurred at the end of 2019, likely due to Steam prompting players with substantial playtime to update their reviews and implementing measures to counter review bombing.

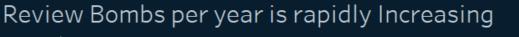
A review bomb refers to a sudden, abnormal spike in negative reviews within a short timeframe, often unrelated to the game's quality. Since no publicly available datasets exist for review bombs, we created one by tagging these spikes. The bubble chart reveals that negatively rated genres are not necessarily subjected to more review bombs, as they exhibit a much

> lower relative number of review bombs despite their low review scores.

Finally, we analyzed the relationship between price and reviews. A dual-axis area chart shows that while more expensive games tend to receive more negative reviews, cheaper games are more vulnerable to review bombing. This highlights how price influences both sentiment and susceptibility to review manipulation.

# Factors influencing Negative Reviews Not Recommended Recommended Early Access Received For Free True







Date

#### Sentiments vs Bomb Rates across Price Range

0.5960

Review Bomb Rate

