

MovieLens Film Rating Dashboard Demonstration

Since a wide variety of films exist to suit different tastes, data involving films is conducive to a personalization, often involving the films or genre of greatest interest to the viewer. They may wish to gain insight involving the rating performance or relative popularity of films within a franchise, within the same genre, or different genres entirely. Fortunately this dashboard allows for many such comparisons.

For the demonstration below, a popular animated film franchise, Shrek, will be the subject of analysis. Please keep in mind that the dataset timestamp ends partway through 2015, so films released after that time are not represented. Also, the dashboard has been sized automatically, so your view may appear different from the images below depending on the device in use.

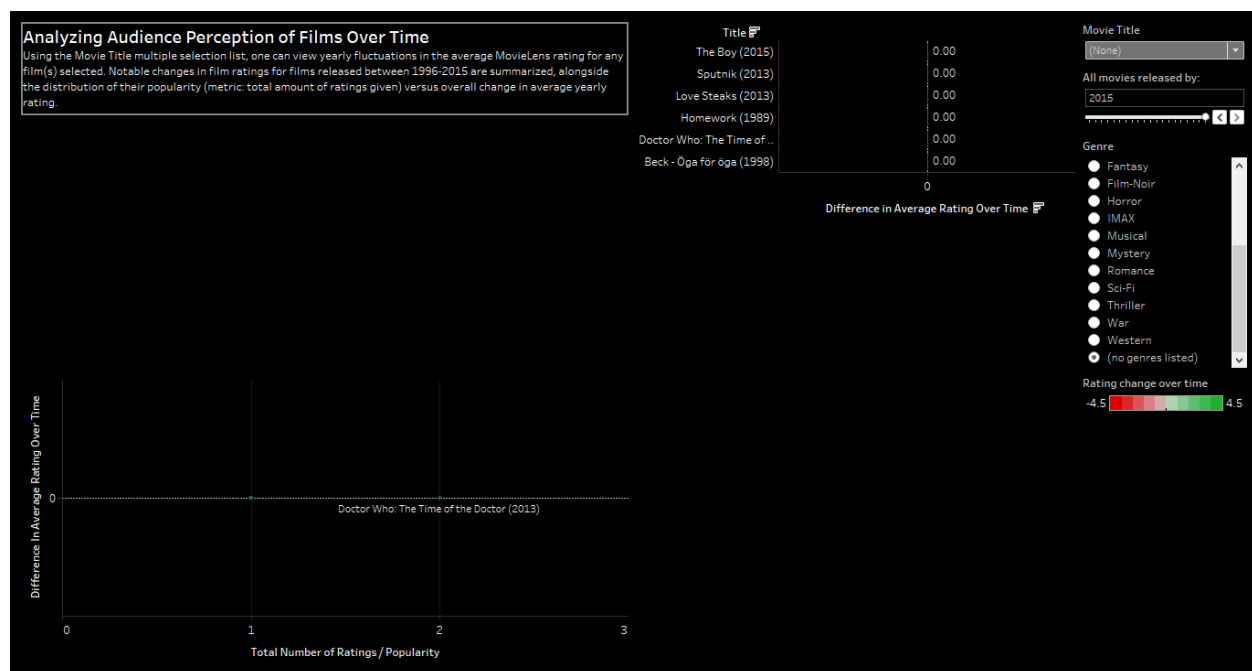


Figure 1. The view has been altered to show only a few data points (by selecting films that have no genre). In this image, Genre multiple selection is set to (no genres listed) as a starting point. When initializing the dashboard, note that the Genre field may default to another genre. As a side note, the movie title field in the data contains the release year in parentheses, so as not to merge rows in the dataset for films with the same name.

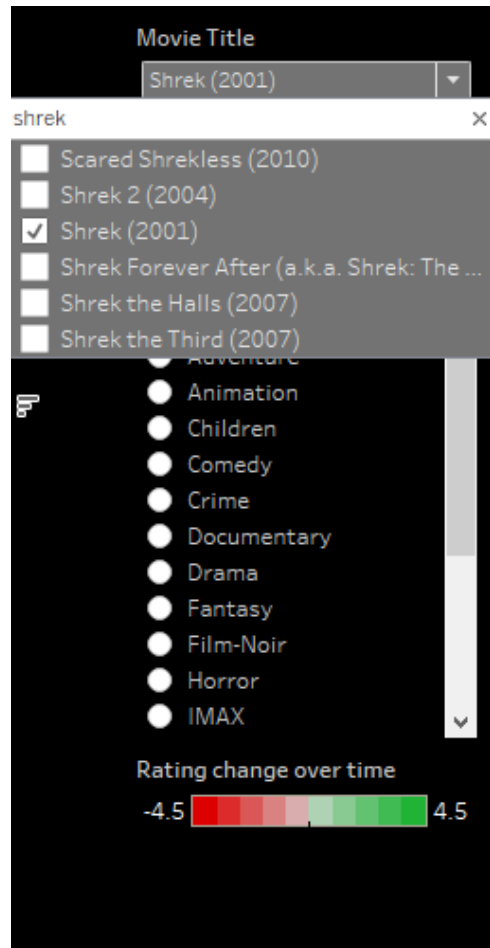


Figure 2: By clicking on the Movie Title multiple selection, a search bar and alphabetized list of films will appear. Any number of films in the MovieLens 1996-2015 dataset can be selected for time series analysis. For this demonstration, we'll select Shrek. Note that when the search bar is empty, films that have already been selected should not appear at the top of the list, so it will be necessary to refer to the time series chart in Figure 3 below to understand what has been selected. If you wish to remove all selected films from the time series view, you can click "All" and click it again to remove the checkmark, excluding every film from the time series view.

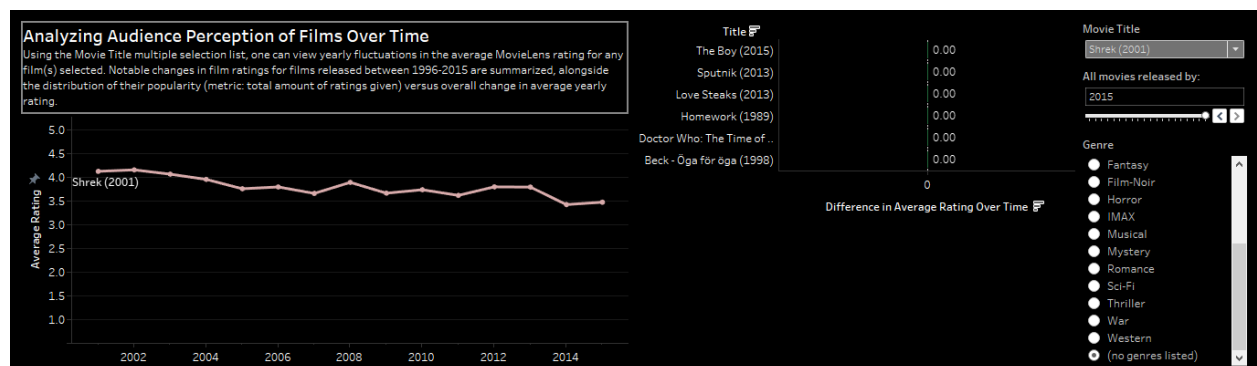


Figure 3: Shrek (2001) time series data displayed on the dashboard.

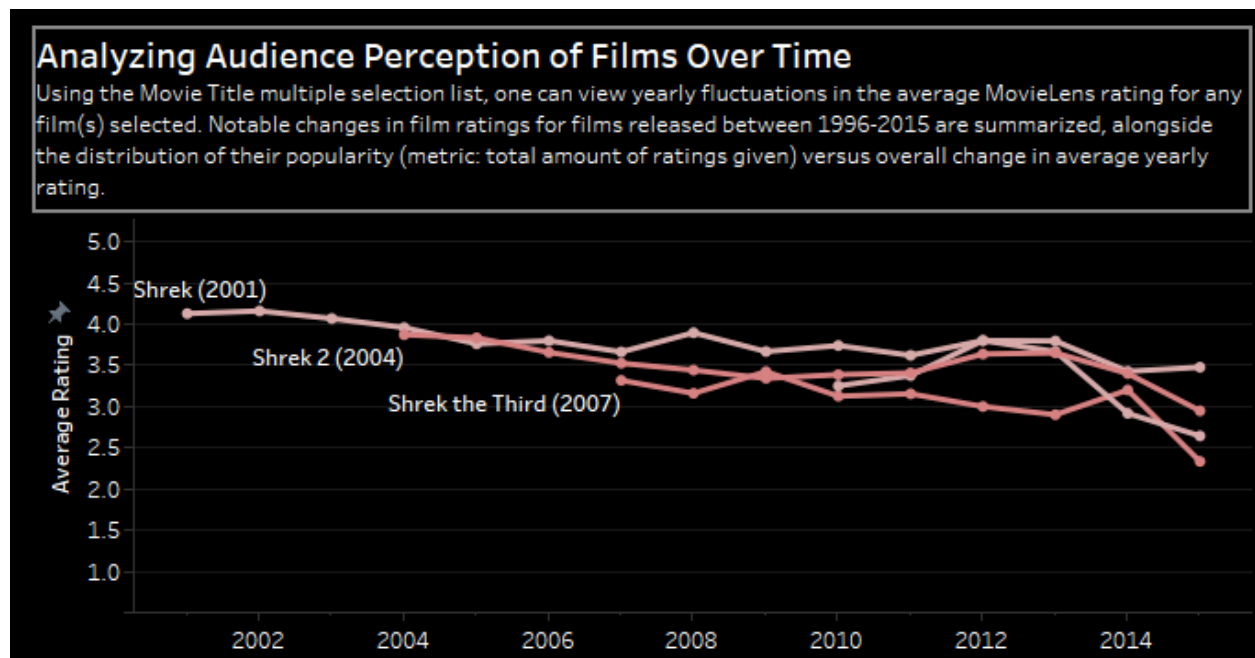


Figure 4: By using the search feature of the multiple-selection, you can click on the other mainline Shrek films for a more direct comparison. Note that Shrek Forever After (2010) is also included in the image above. Names are not permitted to overlap.

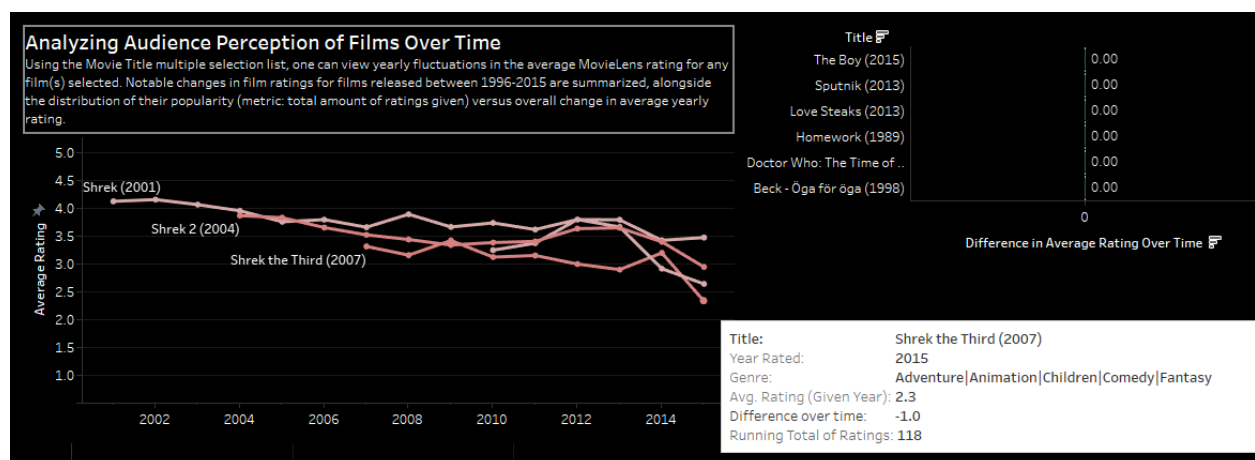
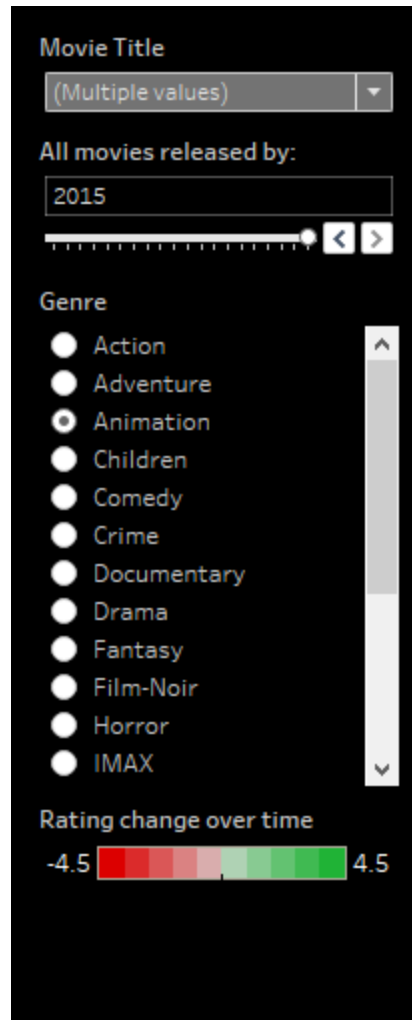


Figure 5: By hovering over a line, users can see metrics including: the year of a data point (Year Rated), the genres, the average rating for that given year, the difference over time (a static number, perhaps one that will be of interest) and a running total of ratings given for a particular film. As will be seen later in the demonstration, this running total will be important in identifying the placement of a film in another visualization. Also, the color scheme of each line is divergent (green for long-term average rating increases and red for decreases), with higher absolute values of average rating changes increasing in saturation and value.



Movie Title

(Multiple values) ▼

All movies released by:

2015

Genre

- ☐ Action
- ☐ Adventure
- ☒ Animation
- ☐ Children
- ☐ Comedy
- ☐ Crime
- ☐ Documentary
- ☐ Drama
- ☐ Fantasy
- ☐ Film-Noir
- ☐ Horror
- ☐ IMAX

Rating change over time

-4.5 4.5

Figure 6: Select a value from the single-value Genre selection. Note that only one genre can be viewed at a time. In order to compare the performance of the Shrek films to other films, it may make sense to frame it in terms of films within the same genre(s). In this case, we can pick Animation.

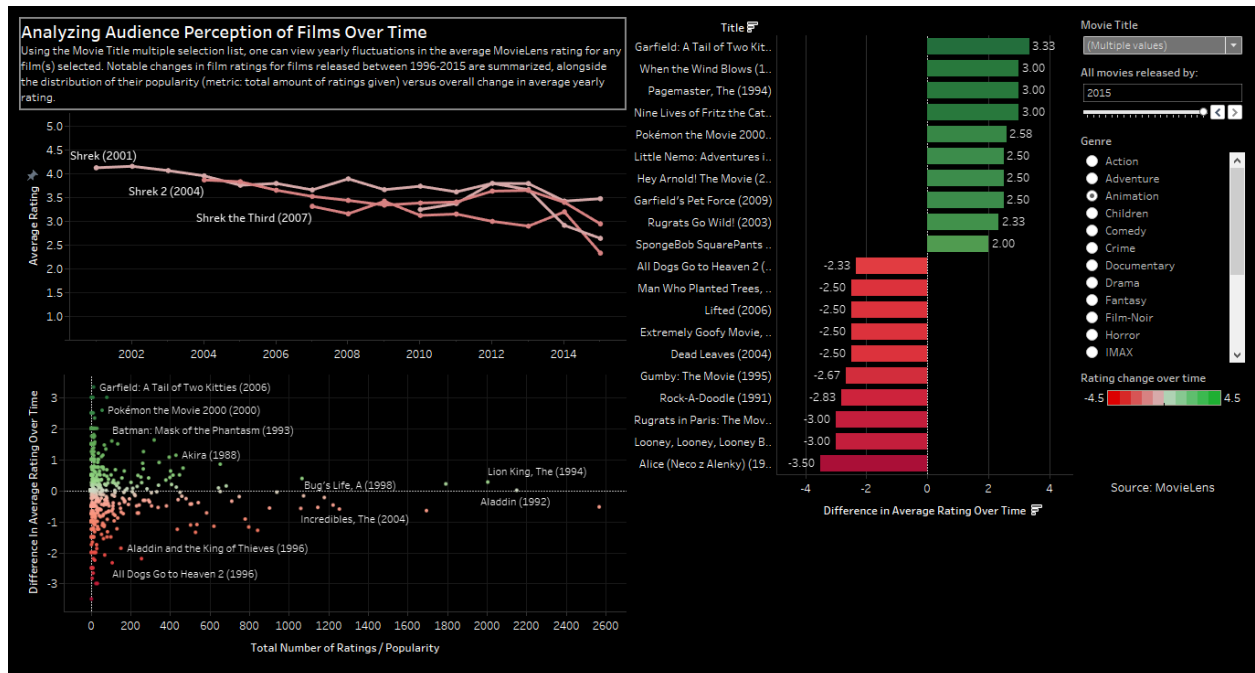


Figure 7: Two visualizations that are tied to the Genre filter should be impacted by clicking in the Genre field. A bar chart containing the films with the 10 highest increases or decreases in their average rating over the timeframe of the dataset is displayed, in addition to a scatter plot showing the relationship between the number of ratings and the difference in rating over time. Note that the Genre changes will not impact the film selection in the time series chart, so the viewer should not lose what they've selected. Let's take a quick look at the bar chart first.

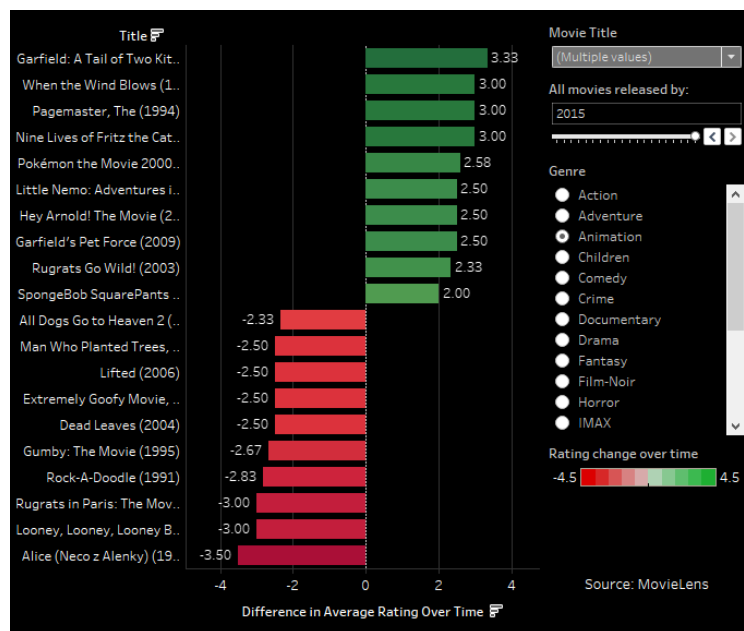


Figure 8: Although not shown in the screenshot, hovering over a horizontal bar will display the movie title, the full list of genres the film belongs to, and the difference over time in annual average rating. In comparing the difference over time values for each of the Shrek films to this

bar chart, we can plainly see that they are not outliers in terms of average rating changes and their decrease in average rating over time, although different for each Shrek film, is relatively minor compared to other ratings that have changed by 2 or more points.

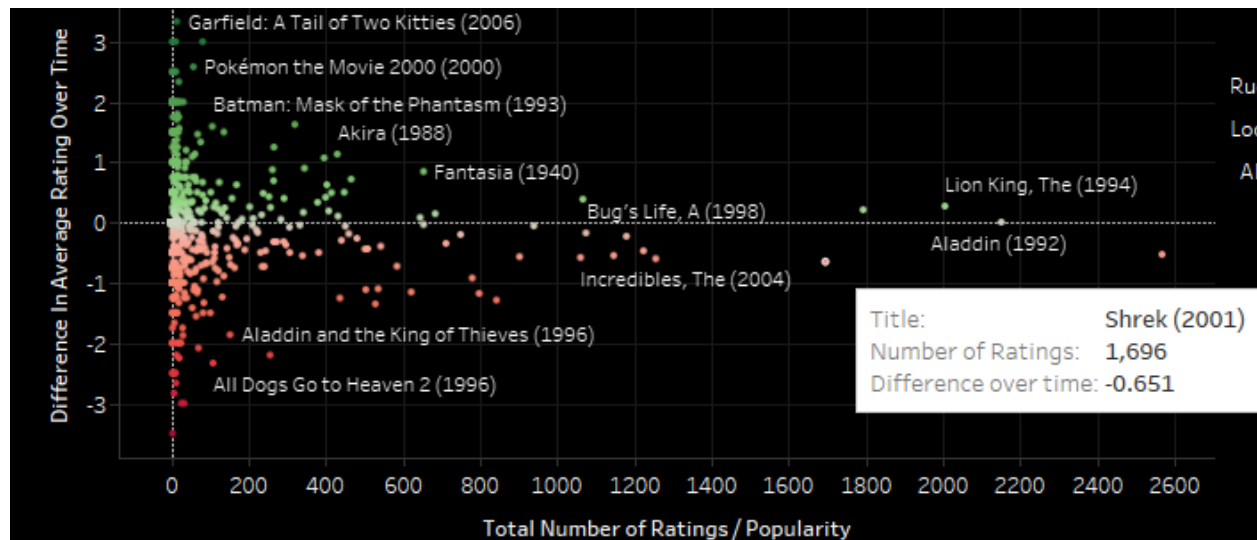


Figure 9: The scatter plot above contains films in the Animation genre, with the difference being that their rating performance is plotted against their total number of ratings as an indicator of popularity. Using the information from the time series tooltip (Difference over time and Number of Ratings), we can see where on the graph Shrek is positioned. As expected, being one of the more popular films, the difference over time is closer to 0, presumably due to lower sample distribution variance from having a larger sample size.

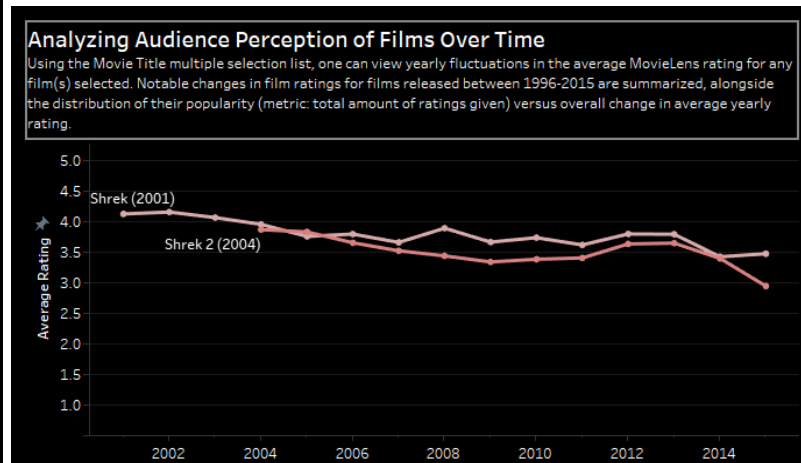
To account for this, viewers are encouraged to see for themselves which films have 1) a decently high sample size of at least a few hundred ratings and 2) higher placement on the Y-axis. Findings for these films are expected to be more significant than those that are close to 0 on the X-axis. Examples of films meeting this “Goldilocks zone” criteria in Figure 9 might include Akira, Batman and the Mask of the Phantasm (both in green), and Aladdin and the King of Thieves (in red).

Movie Title

All movies released by:

Genre

- ☐ Action
- ☐ Adventure
- ☒ Animation
- ☐ Children
- ☐ Comedy
- ☐ Crime
- ☐ Documentary



Figures 10a and 10b: Lastly, if viewers wish to control for recency bias in films that released closer to 2015, a scroll bar with values between 1996 and 2015 (first and last year of review timestamps) has been added such that only older movies will be displayed. A practical example of this might involve the removal of Shrek films that released after 2005, since Shrek and Shrek 2 have had more time to settle in the public consciousness.

Hopefully you will find this dashboard to be a simple and fun exercise, and that it enables you to gain a new perspective on public opinion regarding your favorite films.