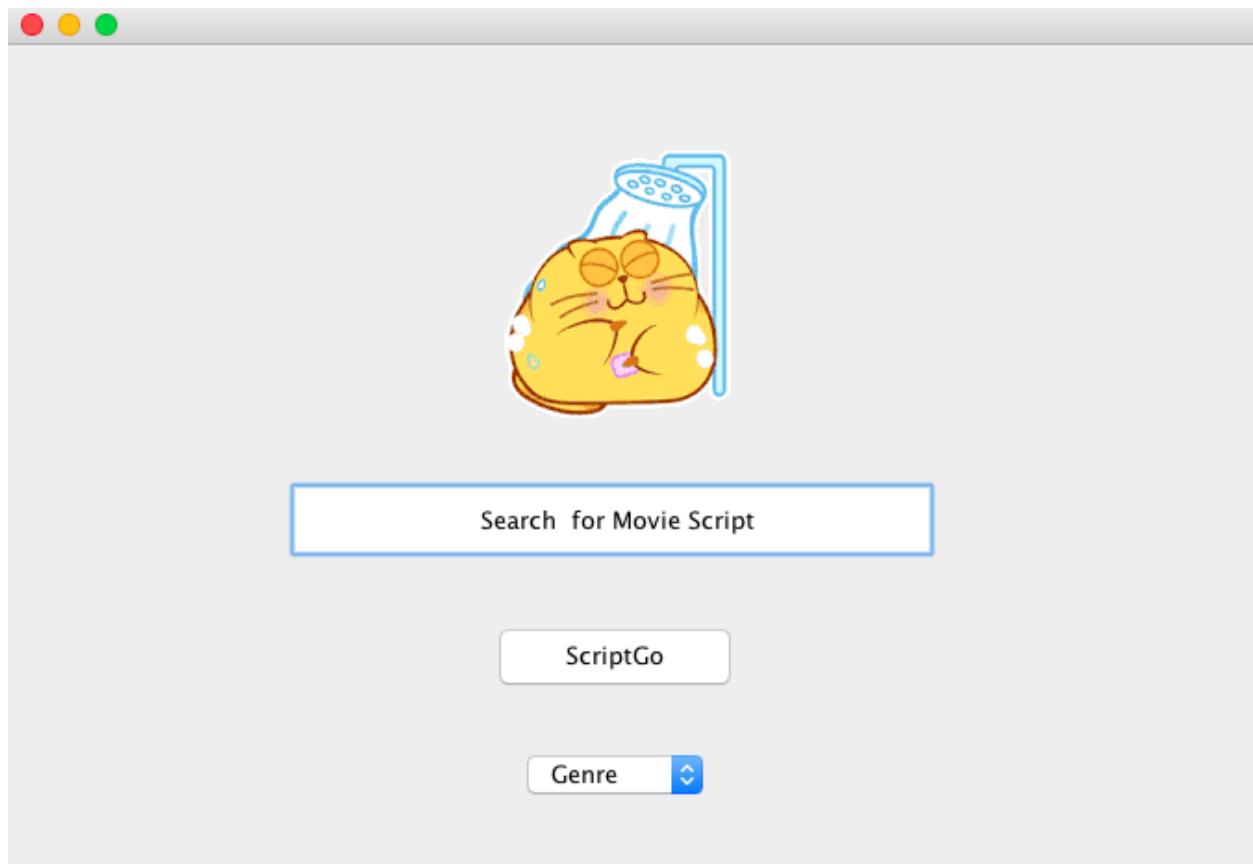


# **Movie Script Visualization Application**

## **User Manual**

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# **USER'S MANUAL**

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## **1.0 GENERAL INFORMATION**

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## **1.0 GENERAL INFORMATION**

### **1.1 Project Overview**

This project is a movie script visualization application. A user interface is provided for users to search for movies. After a user searches a movie, at most three movies with available scripts displays on the screen for users to choose from. The chosen script is then analyzed from backend. Various features of the movie will be visualized and displayed on a webpage upon completion of analysis.

These features include:

1. Overall sentiment, and categories of the script.
2. 60 keywords of the script.
3. Relationship between characters
4. Top 8 characters and their occurrences.
5. Top 8 main characters in the movie with their profile pictures.
6. Emotional fluctuations of top 3 main characters.
7. Personality report of the protagonist.

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## **2.0 SYSTEM SUMMARY**

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## **2.0 SYSTEM SUMMARY**

### **2.1 System Configuration**

In order to run the program, user should install Java. As Chrome browser no longer supports loading html from local files, one would also need to use Firefox browser to see all visualization features. If you have not installed [Java](#) or [Firefox](#) browser, you can download them here by clicking the links.

Once Java is installed, make sure you have downloaded our project (either from GitHub or Canvas).

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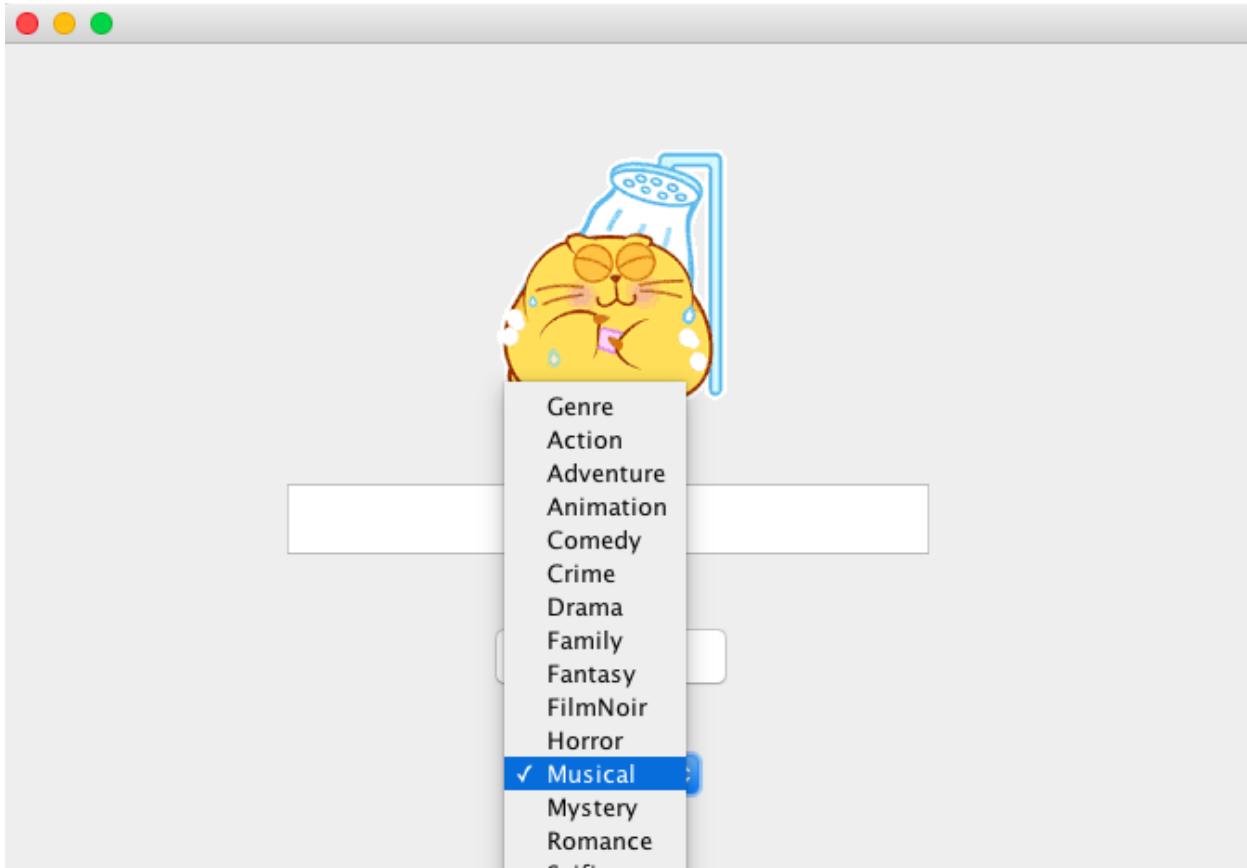
## **3.0 USING THE APPLICATION**

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## 3.0 USING THE APPLICATION

### 3.1 Search Screen

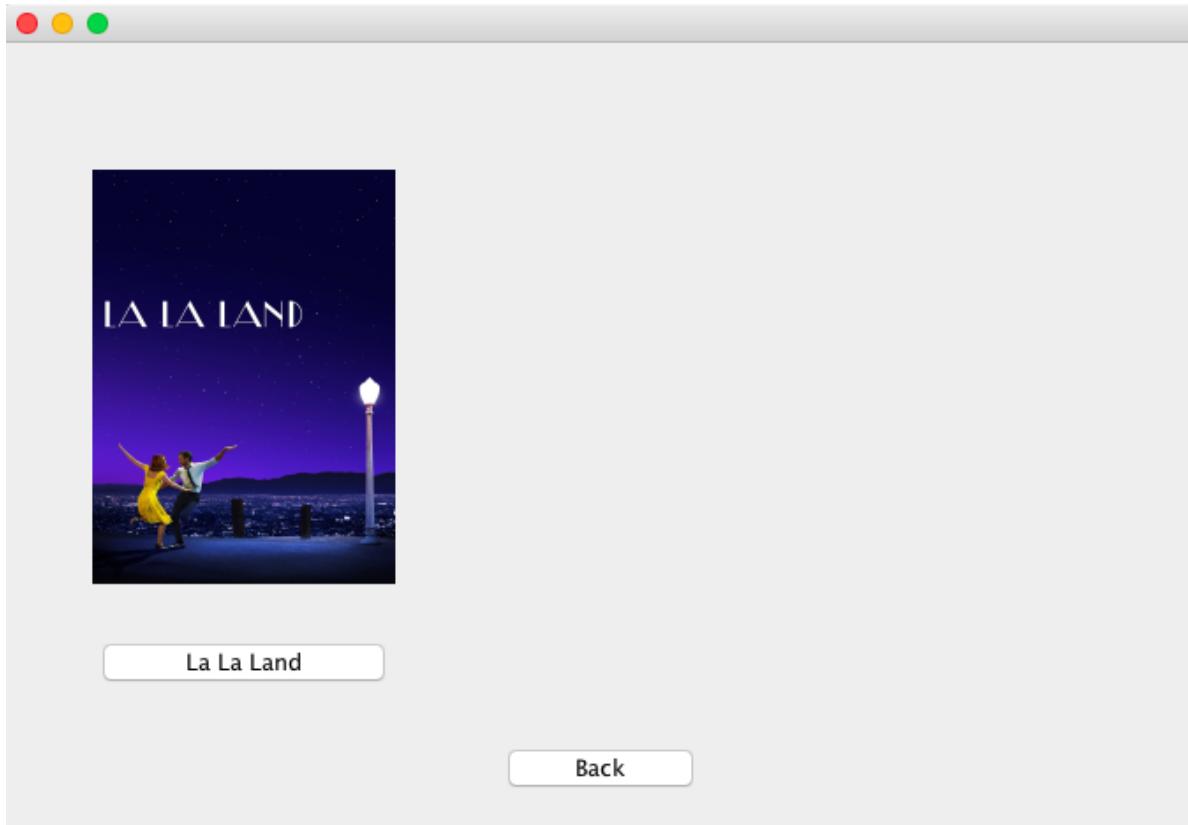
Below is the searching interface of the application. You can either search by typing in a movie's name (partially or accurately), or by choosing the genre through the dropdown menu. Up to three movies will return based on search key. Results are scraped from <http://www.imsdb.com/>, only movies on that website with legal script embedded in html can be returned.



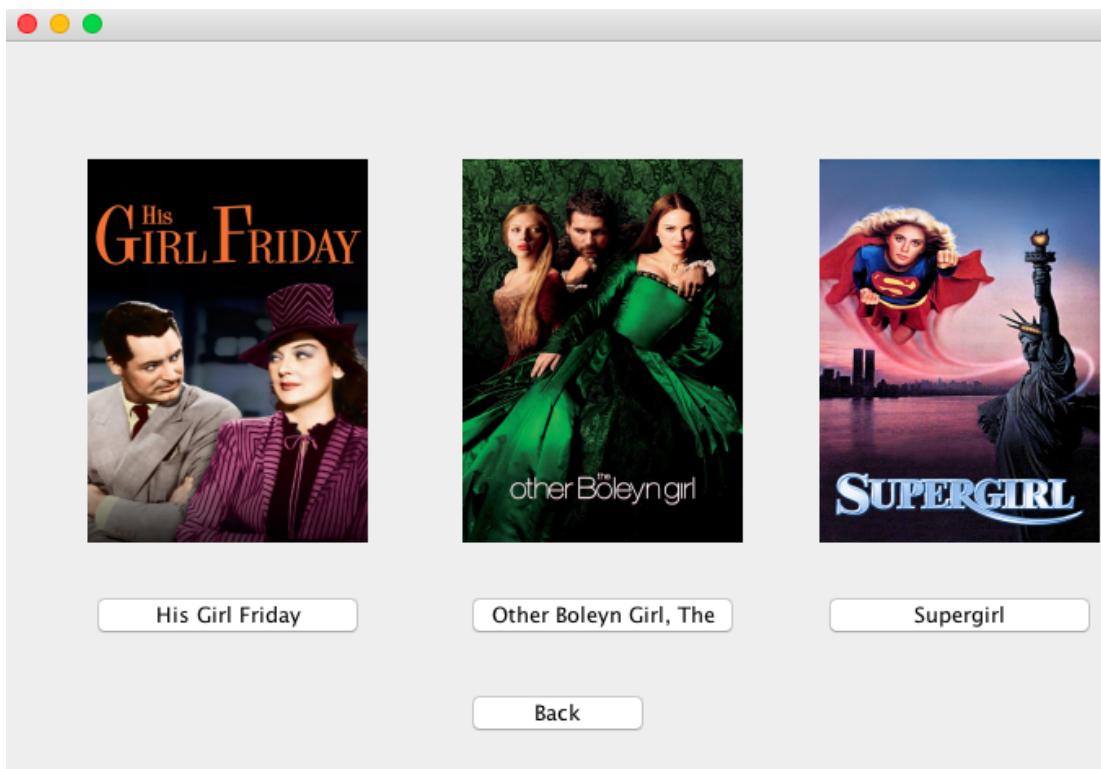
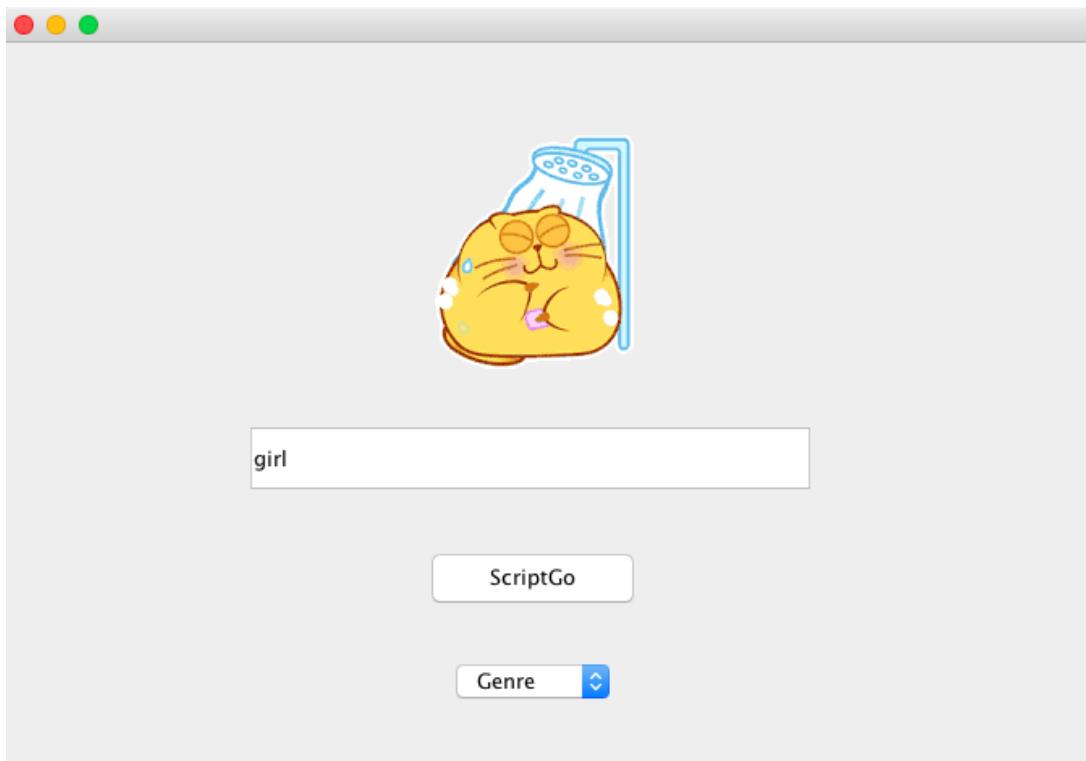
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## 3.2 Movie Poster Screen

After clicking the search button, the movie poster and name will be displayed. Posters are obtained from API provided by <https://www.themoviedb.org/>. Then, by clicking the button under the poster, (in the following example, click on “La La Land”), the program will begin analyzing the script. Since we are manipulating in our program a large quantity of data, the whole process takes about **half an hour**. Depend on the length of a script, this number might be shorter or longer. Prepare a cup of coffee after you hit run. Once analysis is done, you will be led to the next graph visualization choosing frame.



Click the “Back” button to get back to the previous frame. Make another search if you wish. If you cannot recall the exact name of a movie in your mind, simply make a partial search, and our program will match with you three most relevant movies, each displayed with associated poster.

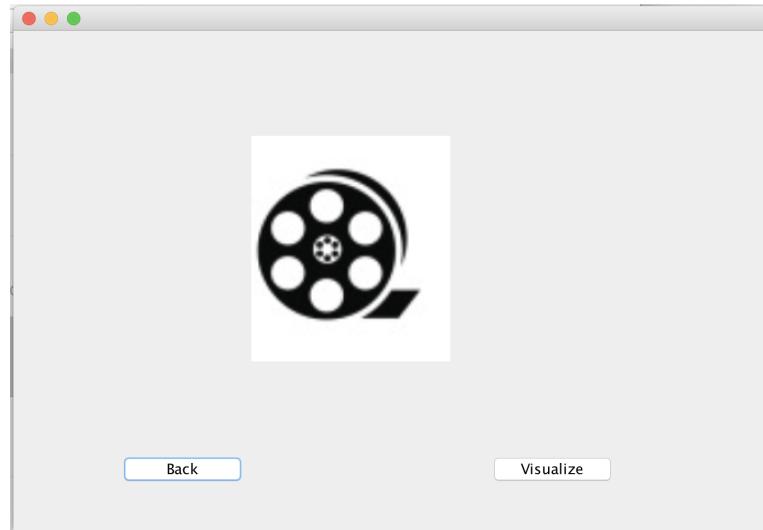


### 3.3 Result Screen

When analysis is done, you will be led to a result screen. You can either click the "Back" button to go back to the search page, or the "Visualize" button to view the final visualization. If FireFox is your

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default browser, the website will pop out in FireFox automatically. If not, you may go to the folder data and use Firefox to open the HTML file script.html.

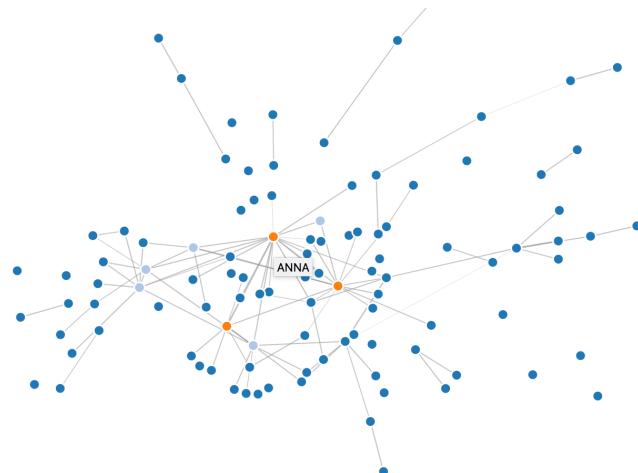


### 3.4 Visualization Webpage

The final visualization of the movie will all be shown on two separate webpages. The script.html displays overall analysis of the whole script, including sentiment, categories, 60 keywords of the script, relationship between characters and top 8 characters with their occurrences. A sample page of Frozen-Disney is shown below. In the relation graph, three orange dots represent the most important characters. You may find the name of any character by hovering your mouse over the vertex. The graph is moveable. Drag any vertex around to see the effect.

#### Relationship Graph

Relationship of all characters in a script visualized as a force-directed graph. Each vertex is a character. Top three main characters are of orange, top ten main characters are of light blue, and peripheral characters are of dark blue. Each edge is assigned a force indicator, calculated using the Natural Language Processing API, symbolizing the relationship between two roles.



## Frozen-(Disney)

Header

An overall sentiment of a given script with a score. Categorize a script into a hierarchy that is 5 levels deep with a relevance score.

#sentiment 0.00681484

#/religion and spirituality/christianity 0.637585

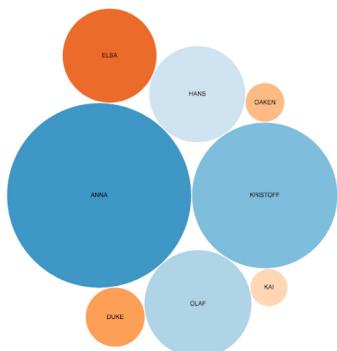
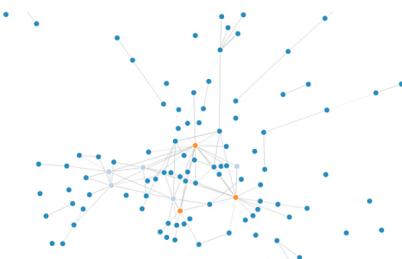
#/food and drink/food/frozen food 0.544058

#/family and parenting/children 0.415411



## Relationship Graph

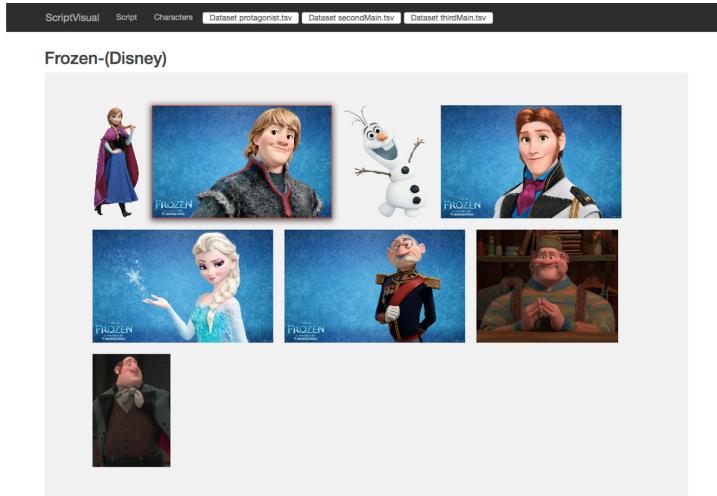
Relationship of all characters in a script visualized as a force-directed graph. Each vertex is a character. Top three main characters are of orange, top ten main characters are of light blue, and peripheral characters are of dark blue. Each edge is assigned a force indicator, calculated using the Natural Language Processing API, symbolizing the relationship between two roles.



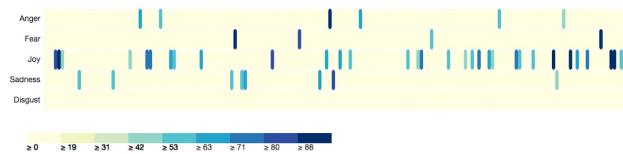
## Bubble Graph

Names of main characters sized by their occurrences.

The characters page shows top 8 main characters in the movie with their profile pictures. Characters are extracted from script while picture matching is enabled by applying Google Customer Search. The page also shows emotional fluctuations of the top 3 main characters. You can choose different characters by switching the tabs(Dataset protagonist.tsv, secondMain.tsv, thirdMain.tsv) in the navigation bar. The picture of the chosen character will be highlighted and emotional timeline of the chosen persona will be displayed below the profile images. At the end of the page, there is a personality report of the protagonist. All natural language understanding, personality insights and tone analysis are supported by IBM Watson API. All graphs are generated via D3js.



Emotional Change of KRISTOFF



#### Personality of ANNA

An icicle graph visualizing the protagonist's intrinsic personality characteristics, including Big Five, Need and Values. Data derived using Personality Insight API which applies linguistic analytics and personality theory.



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## **4.0 RESULT GALLERY**

# LES MISERABLES

ScriptVisual Script Characters

## Les Miserables

### Header

An overall sentiment of a given script with a score. Categorize a script into a hierarchy that is 5 levels deep with a relevance score.

#sentiment -0.177118

#/art and entertainment/music/music genres/opera 0.531204

#/religion and spirituality/christianity/catholicism 0.501052

#/law, govt and politics/law enforcement/police 0.467703

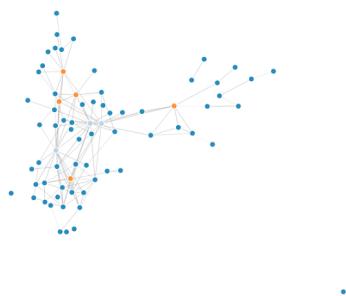


### KeyWords

Important keywords in script sized by relevance.

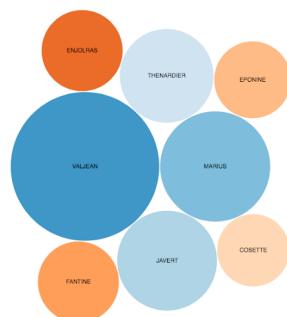
### Relationship Graph

Relationship of all characters in a script visualized as a force-directed graph. Each vertex is a character. Top three main characters are of orange, top ten main characters are of light blue, and peripheral characters are of dark blue. Each edge is assigned a force indicator, calculated using the Natural Language Processing API, symbolizing the relationship between two roles.

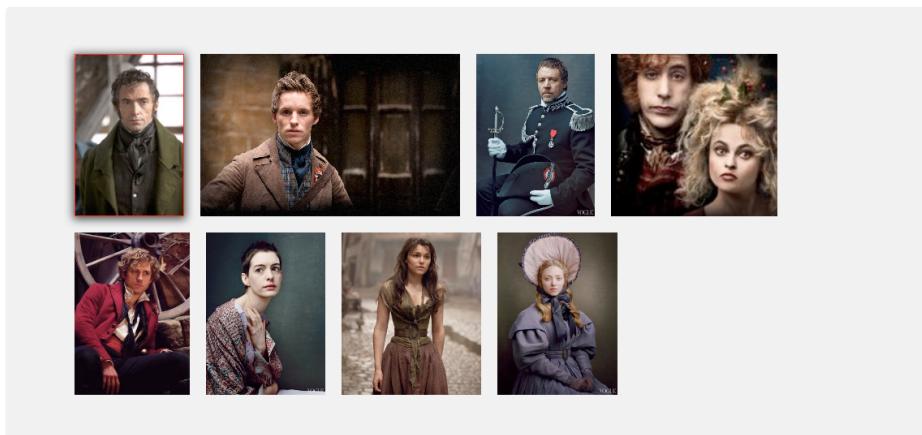


### Bubble Graph

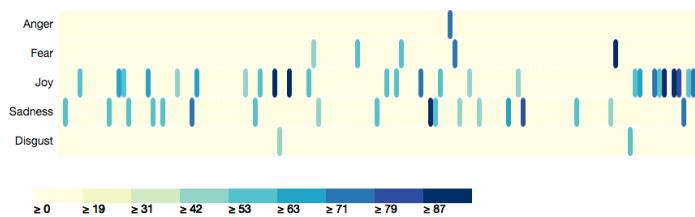
Names of main characters sized by their occurrences.



## Les Miserables

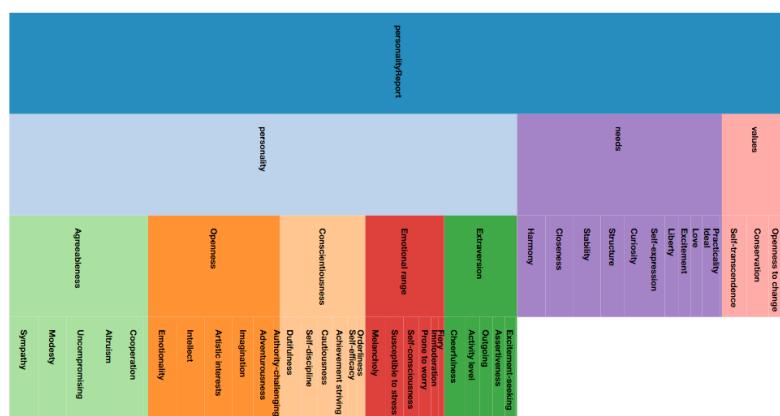


## Emotional Change of VALJEAN



## Personality of VALJEAN

An icicle graph visualizing the protagonist's intrinsic personality characteristics, including Big Five, Need and Values. Data derived using Personality Insight API which applies linguistic analytics and personality theory.



## Titanic

ScriptVisual    Script    Characters

## titanic

Header

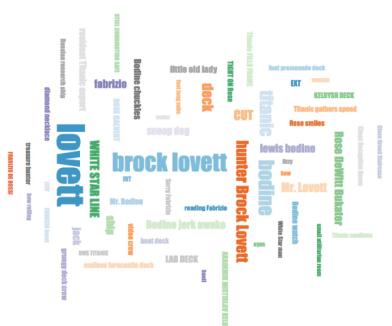
An overall sentiment of a given script with a score. Categorize a script into a hierarchy that is 5 levels deep with a relevance score.

#sentiment 0.0481468

#/art and entertainment/movies and tv/movies 0.509857

#/automotive\_and\_vehicles/boats\_and\_watercraft 0.428507

"A general introduction to the history of the world." 2 vols. 1811.



## KeyWords

Important keywords in script sized by relevance.

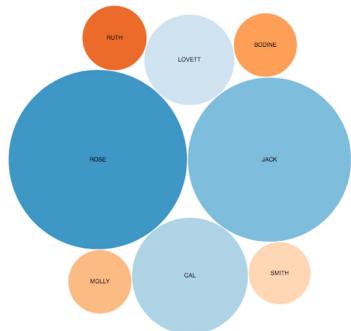
## Relationship Graph

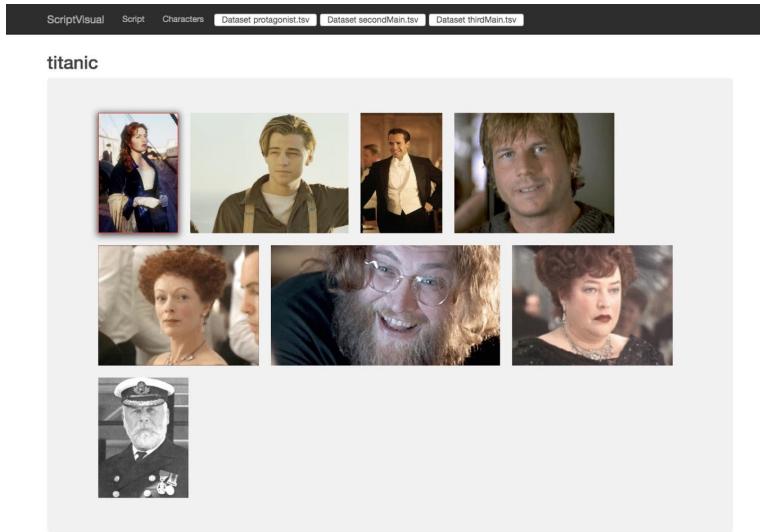
Relationship of all characters in a script visualized as a force-directed graph. Each vertex is a character. Top three main characters are of orange, top ten main characters are of light blue, and peripheral characters are of dark blue. Each edge is assigned a force indicator, calculated using the Natural Language Processing API, symbolizing the relationship between two roles.



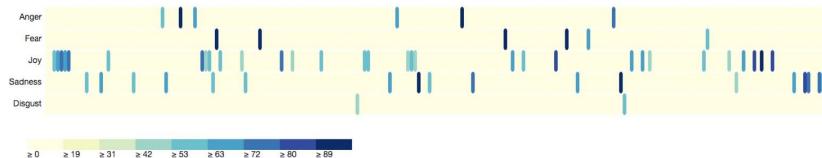
## Bubble Graph

Names of main characters sized by their occurrences.





Emotional Change of ROSE



### Personality of ROSE

An icicle graph visualizing the protagonist's intrinsic personality characteristics, including Big Five, Need and Values. Data derived using Personality Insight API which applies linguistic analytics and personality theory.

