

Watching Great Movies and Uncovering Similar Movies Employing Recommendation Systems


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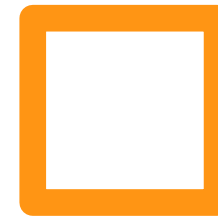


Outline

- 
- Overview/Business Problem
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Overview/Business Problem

I am acting as a data scientist in a research lab at the University of Minnesota to build a recommendation system that recommends 5 highly rated movies to people in the University of Minnesota area based on some past information and opinions on great movies expressed by these people. I want to use a collaborative filtering user-based method to define movie recommendations for these people.



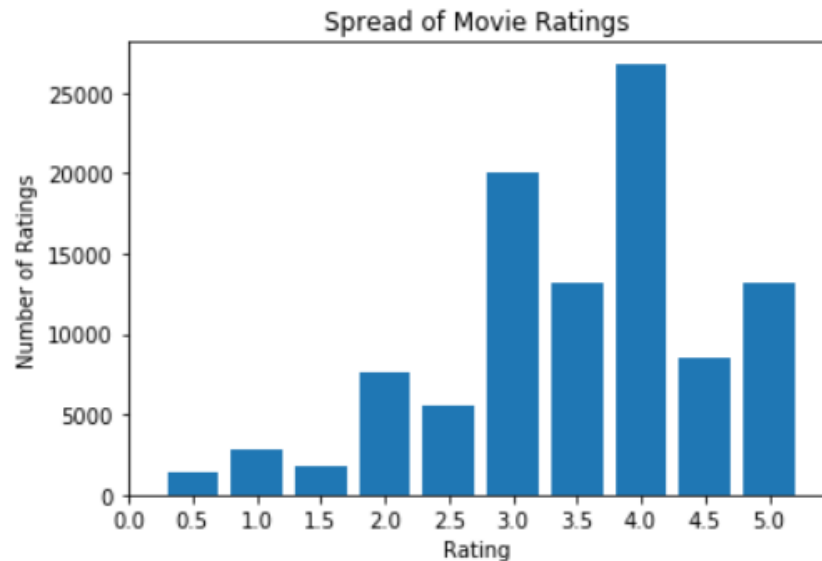
Data

- This project uses data from the MovieLens dataset from the GroupLens research lab at the University of Minnesota.
- The dataset covers 100836 ratings of movies from past viewings of movies.
- There are 610 individual movie raters and 9724 unique rated movies in the dataset.

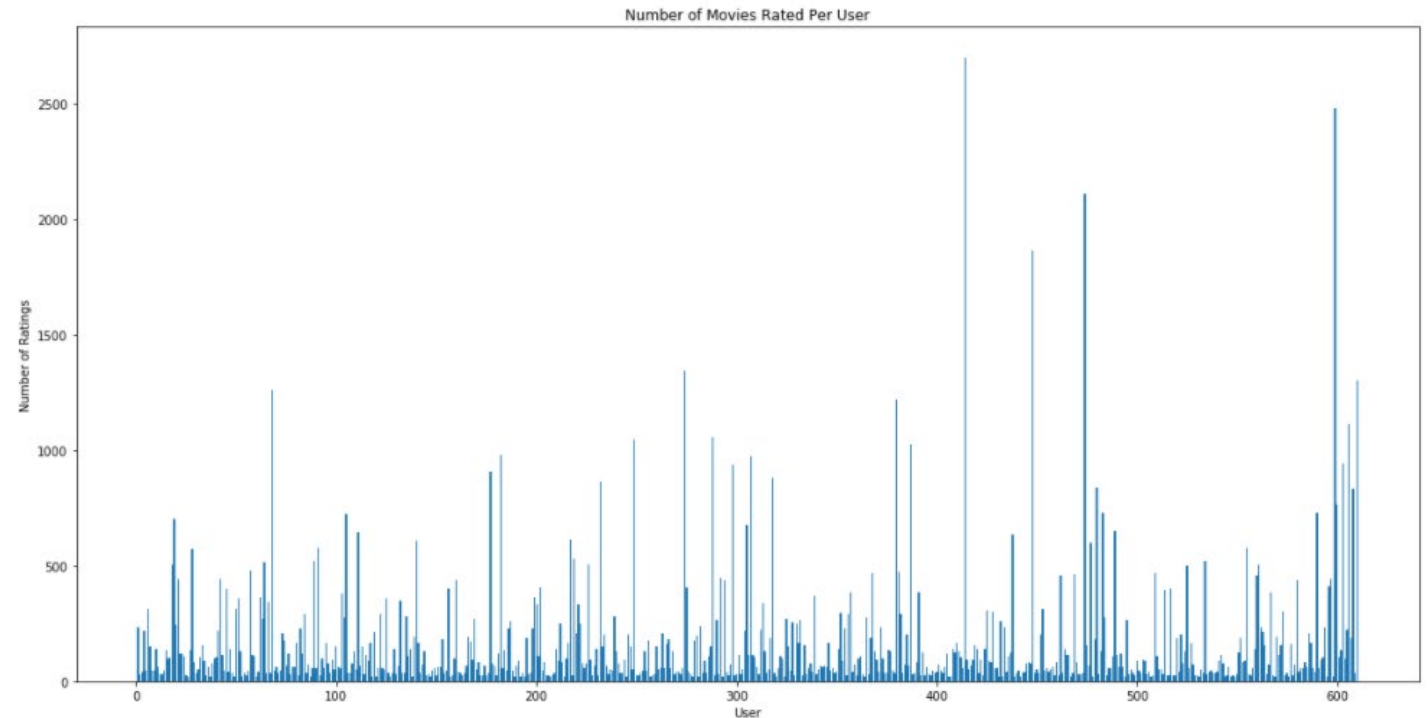


Data Preparation

-looked at spread of movie ratings



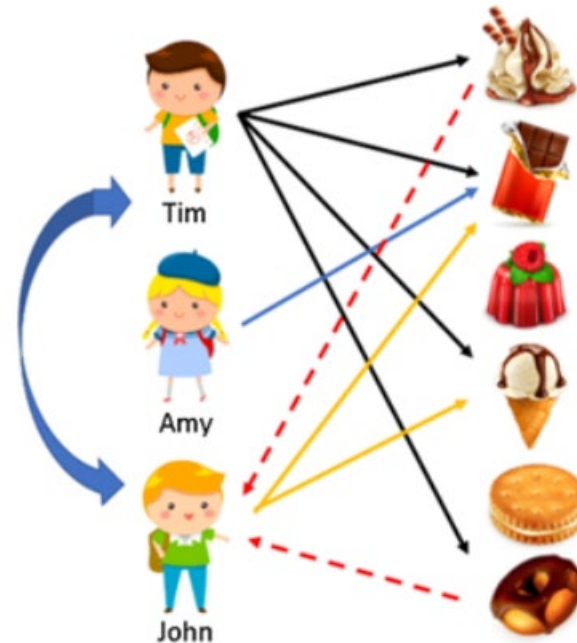
-constructed a graph of number of ratings for each user



Data Modeling

SVD with KNN model

- Users similar to user 43 who watched Toy Story and rated it a '5'
- Most movies recommended were released around the same year Toy Story was released
- Highly rated movies were mostly recommended



Function Based, Built Out, Non-model method

- Users similar to user 43 who watched Toy Story and rated it a '5'
- Euclidean distance metric to calculate user similarities
- Took out movies already watched by a user
- Movies recommended had estimated rating of a '5'



Cold Start Problem

- occurs when lacking new user information
- addressed using SVD matrix with provided information
- movies released around the same year as 'Toy Story' recommended
- movies considered popular with estimated rating a '5'

Conclusions

5 Similar Movies with KNN Model

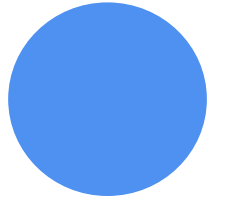
- Men in Black (a.k.a. MIB) (1997)/5.0
- Forrest Gump (1994)/5.0
- Star Wars: Episode IV - A New Hope (1977)/5.0
- Pinocchio (1940)/4.5
- Mrs. Doubtfire (1993)/3.5

5 Similar Movies with Function-Based Model

- SORI: Voice from the Heart (2016)/5.0
- Rivers and Tides (2001)/5.0
- Presto (2008)/5.0
- All the Vermeers in New York (1990)/5.0
- My Left Eye Sees Ghosts (Ngo joh aan gin diy g...)/5.0

Recommendations for Further Analysis

- Consider an item-item based collaborative filtering method
- Change the distance metric and parameters for function-based recommendation system
- Deploy a recommendation system for use to new users





Thank you!

Email:

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Github Link:

<https://github.com/jmstipanowich/MovieRecommendations>

Picture Sources:

<https://myjourneymyride.co.nz/2017/08/29/old-school-childhood-fav-movies-top-10/>

<https://predictivehacks.com/how-to-run-recommender-systems-in-python/>