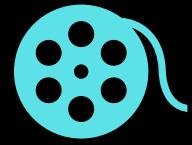


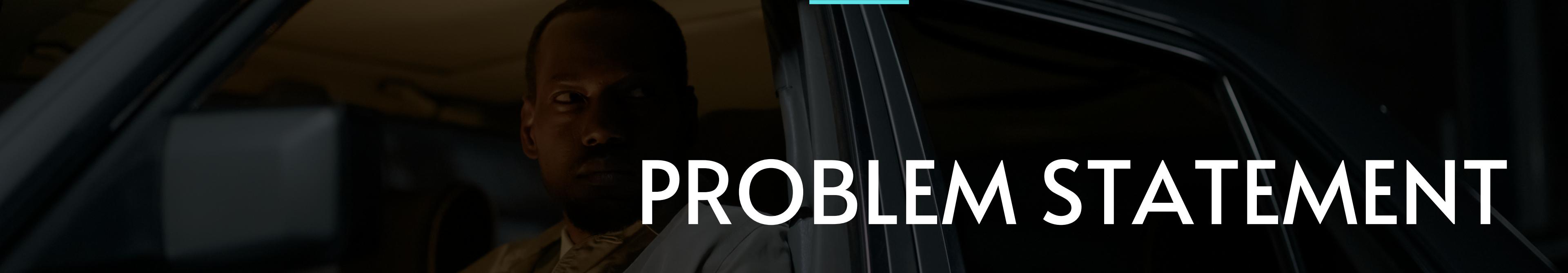
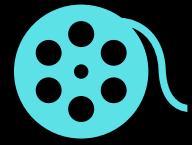
# MOVIE RECOMMENDATION SYSTEM

FOR MOVIEEXPLOSION



# OVERVIEW

- MovieXlosion, a new streaming platform, intends to have a system that ensures their user satisfaction. The performance of the platform is dependent on how they can keep users engaged, One way to do this is by providing tailor-made recommendations to the users and drive them to spend more time on the platform.
- I will build a system that recommends movies to users based on their ratings of previous watched movies or preferred genre . Using collaborative filtering, content-based filteringand hybrid filtering approaches



# PROBLEM STATEMENT

- MovieXplosion, a new streaming platform, intends to have a system that ensures their user satisfaction. The performance of the platform is dependent on how they can keep users engaged, One way to do this is by providing tailor-made recommendations to the users and drive them to spend more time on the platform.
- I will build a system that recommends movies to users based on their ratings of previous watched movies or preferred genre . Using collaborative filtering, content-based filteringand hybrid filtering approaches



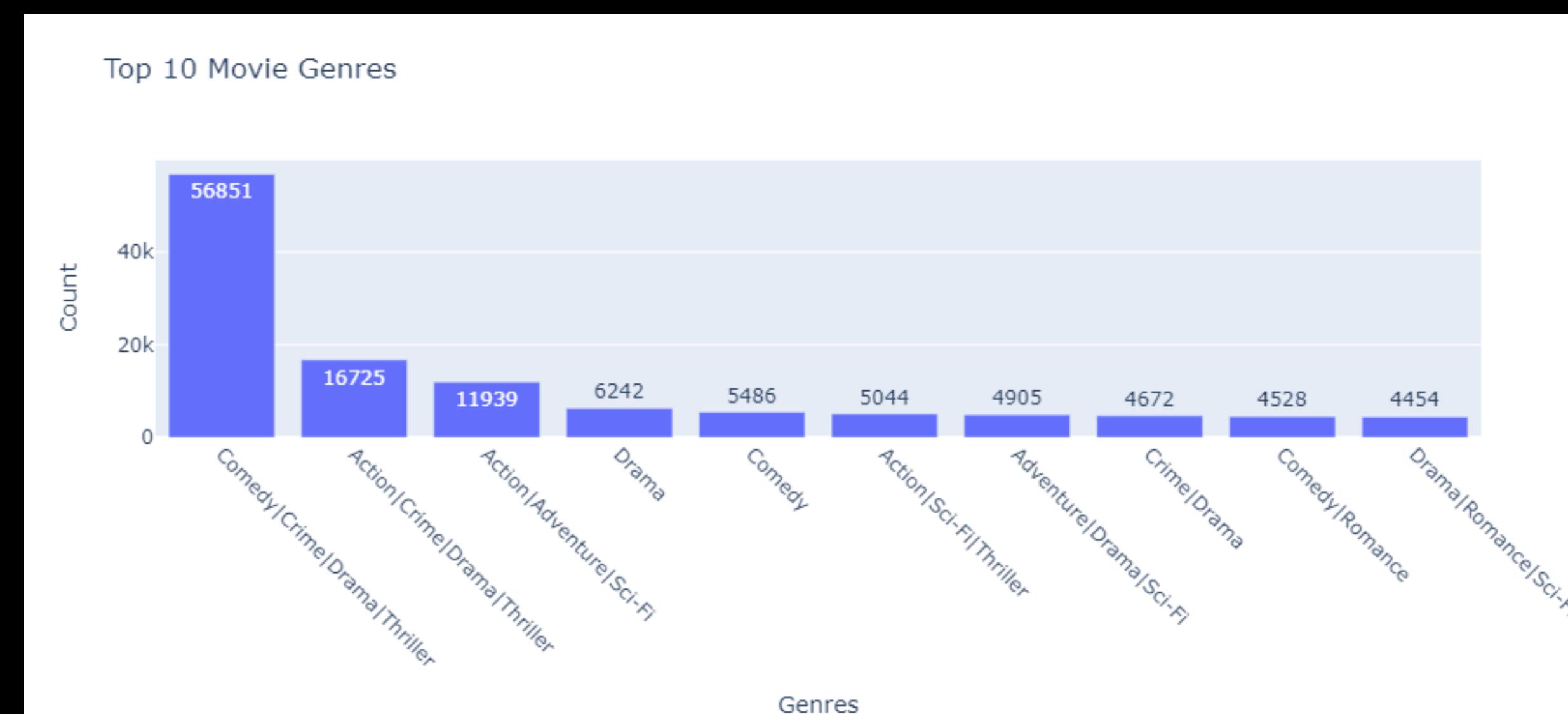
# DATA UNDERSTANDING

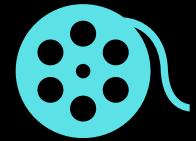
## 1. Top Movie Genres

From the data we can notice a number of things.

It's interesting to note that the combination of Comedy, Crime, Drama, and Thriller genres appears to be highly prevalent in the dataset.

This finding indicates that movies with these genre combinations might have a broad appeal among the users.





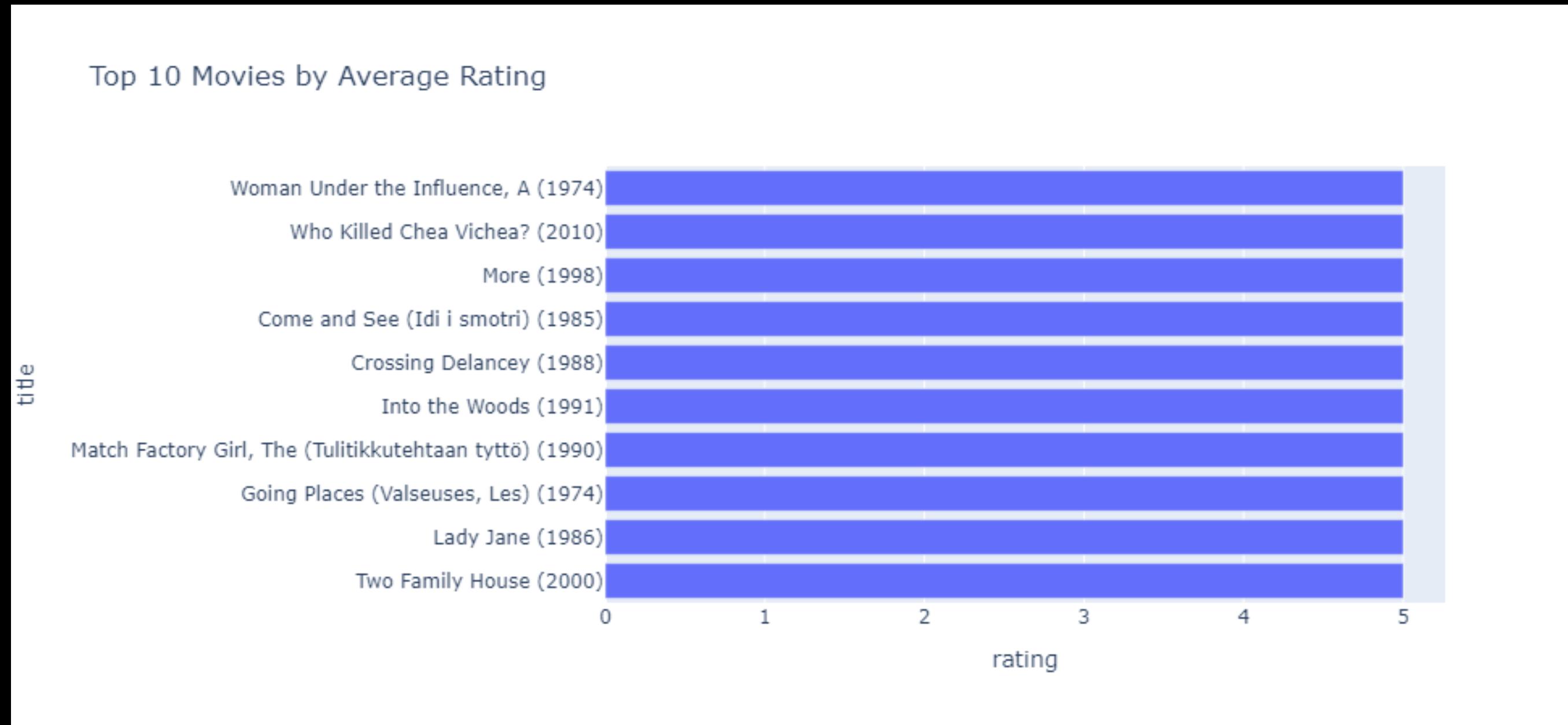
## 2. Top 10 movies based on Average Rating

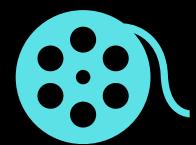
- The top 10 movies all have a rating of 5.

These movies are likely exceptional in terms of their

- quality, storytelling, performances, entertainment value, or any other criteria that contribute to the ratings.

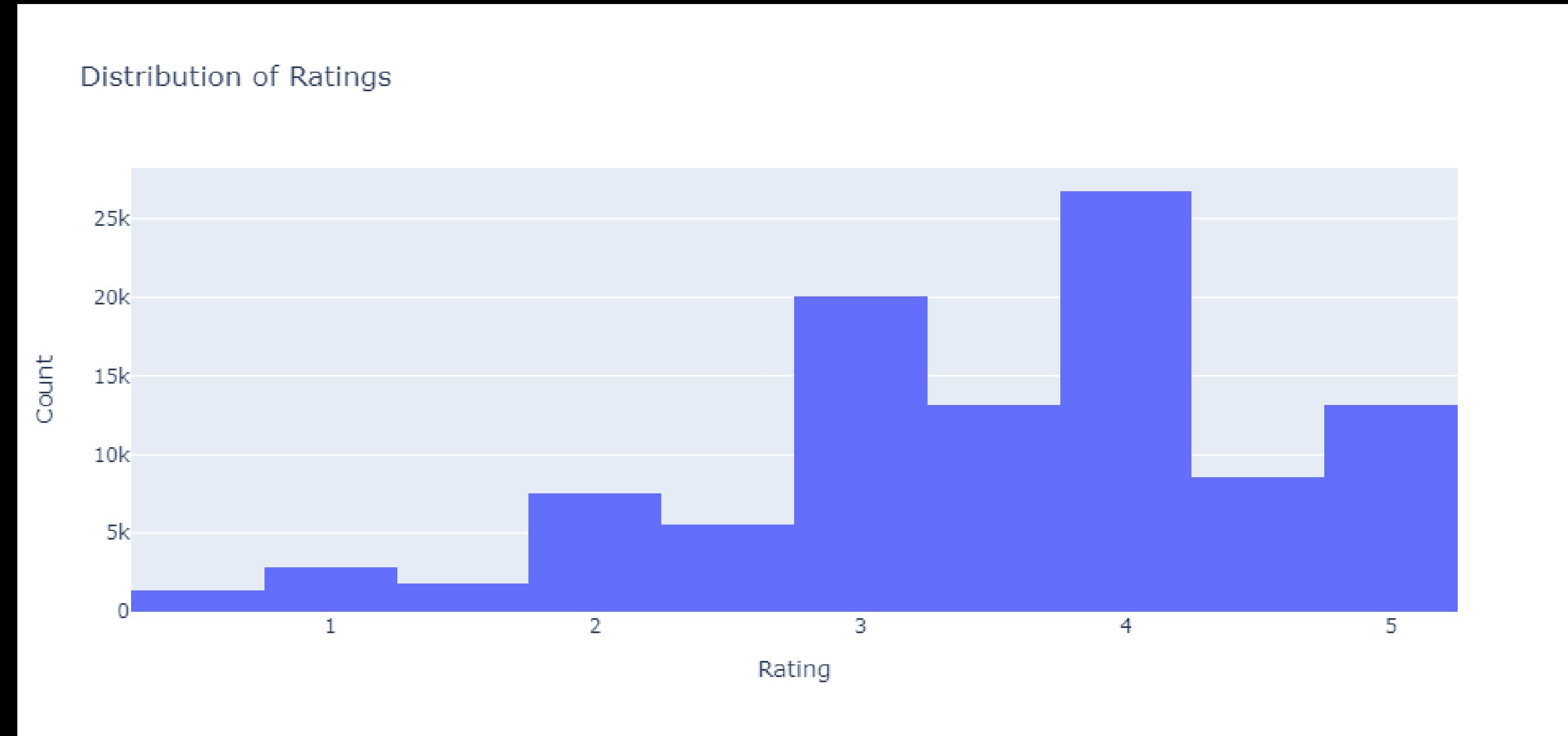
- From this information, we could effectively decide to have these as the recommended movies for a new user





### 3. Distribution of ratings

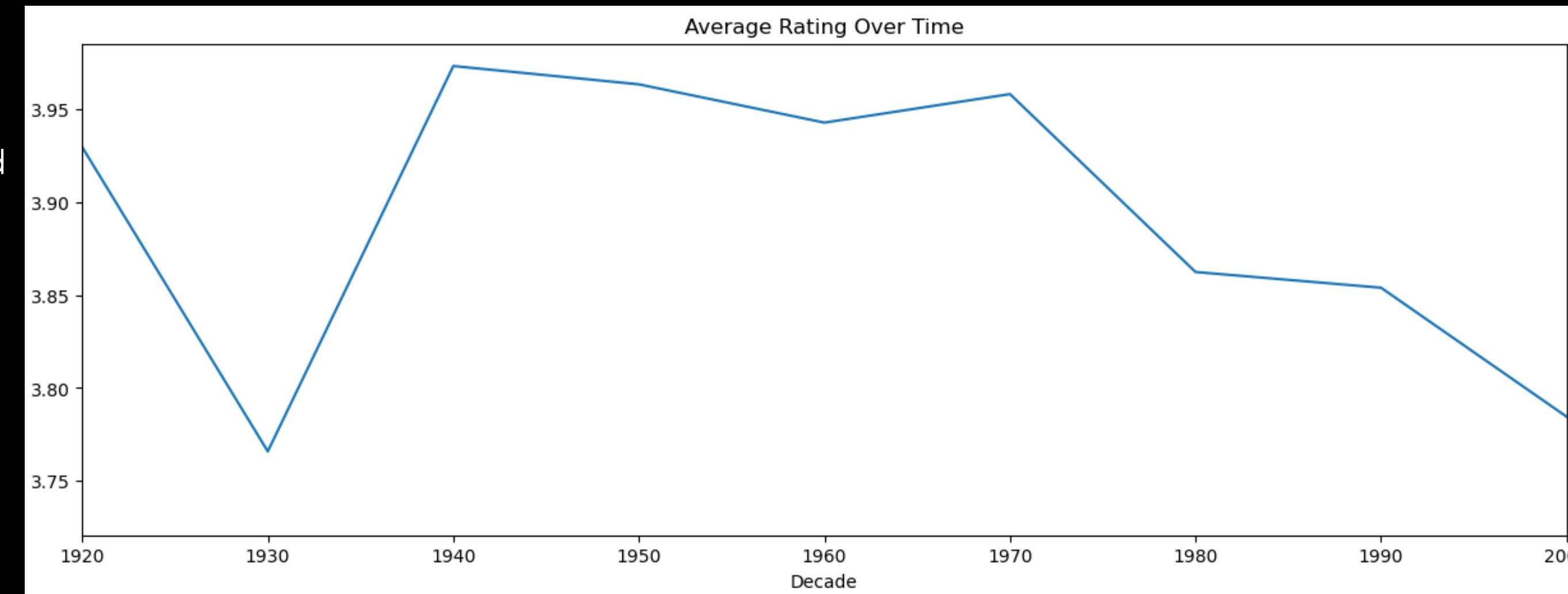
- Interesting to note that the majority of the movies are rated 4 while least rated 0.5.
- This can mean we have a higher number of movies that users have some interest to. Hence boosting our chances of recommending a movie the user will like.





## 4. Average rating over period of time

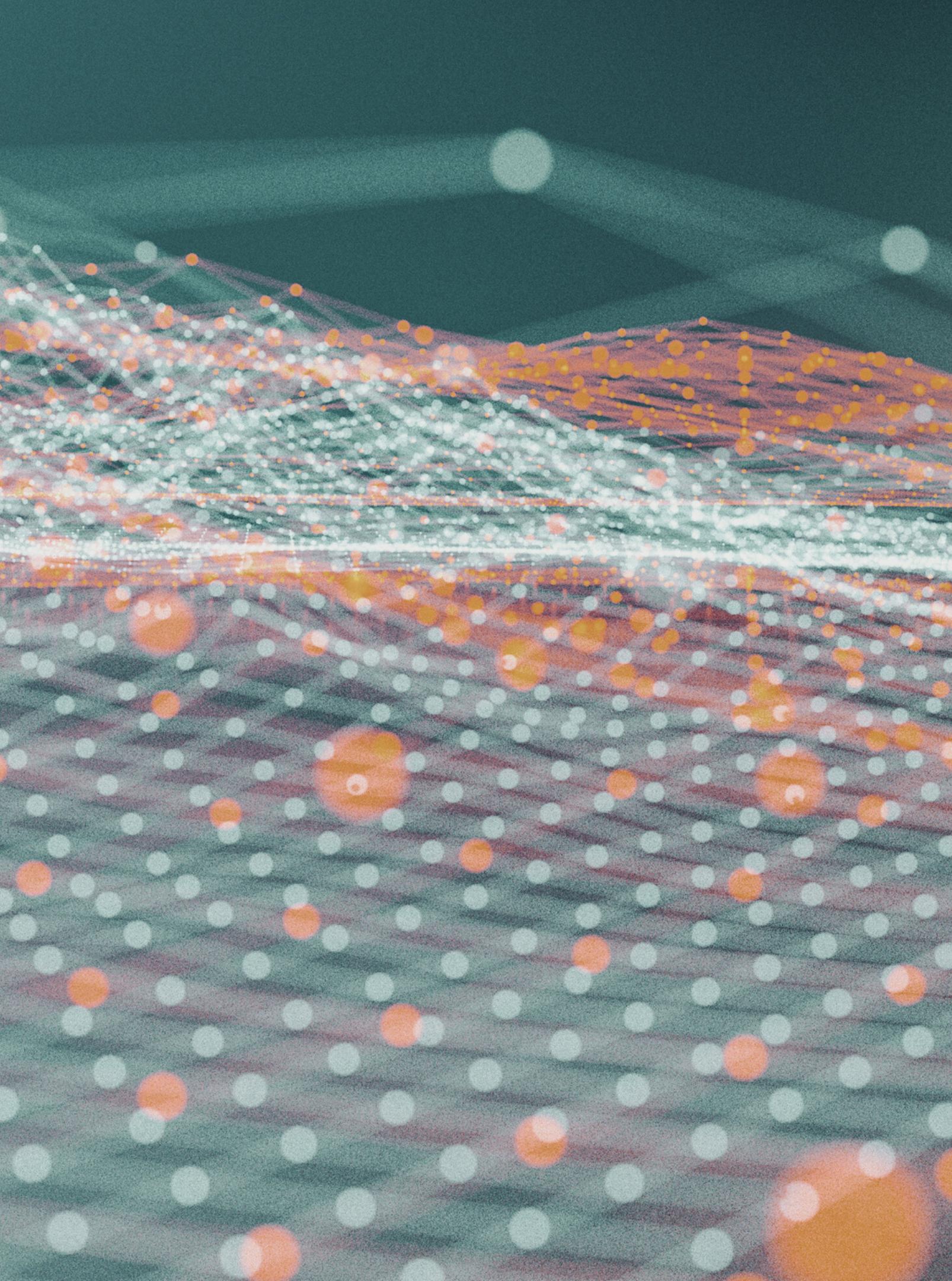
- The lowest mean rating was observed for films produced during the 1930s, whereas movies from the 1940s received the highest average ratings.
- In general, average ratings have been on a downward trend since the 1950s, with a particularly steep decline noted between 1970 and 1980.
- The year of a movie's production appears to be a highly informative factor in predicting its average rating.

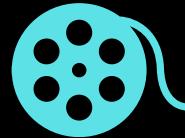




# MODELING

- In order to conduct this evaluation, I split the dataset into training and test sets, with a 20% testsize, ensuring that our model's performance is assessed on unseen data. I then proceeded to evaluate three different models:
- SVD (Singular Value Decomposition):  
KNNBasic with Pearson correlation: provide recommendations.  
KNNWithMeans with Pearson correlation: Similar to KNNBasic,
- For each model, I performed 5-fold cross-validation, measuring the Root Mean Squared Error(RMSE) as the evaluation metric. (The RMSE quantifies the average difference between the predictedand actual ratings.)

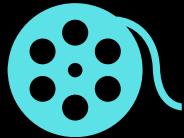




# RECOMMENDATIONS

- Choose the SVD Model: The SVD (Singular Value Decomposition) model achieved the lowest RMSE of 0.3903 and 0.2971 after tuning, indicating superior performance compared to the other models. Therefore, we recommend selecting the SVD model as the primary recommendation algorithm for the movie streaming platform.
- **Continuous Model Improvement:** To ensure ongoing user satisfaction, it's crucial to continuously improve the recommendation models.
- **Personalization and User Engagement:** Focus on personalization to tailor recommendations to individual user preferences.
- Implement A/B testing to assess the impact of recommendation changes on user engagement and satisfaction.





# CONCLUSIONS

- The success of the movie streaming platform's recommendation system will depend on the implementation of the recommended models and strategies.
- The focus should be on delivering a personalized, engaging, and continuously improving user experience to enhance user satisfaction and retention.





# THANK YOU

---

FILM