Interactive Anime Group Recommendation System

Chase Harrington, Tanmay Kenjale, Xiang Li, Ajay Majmudar, Duncan Siebert,Kien Tran

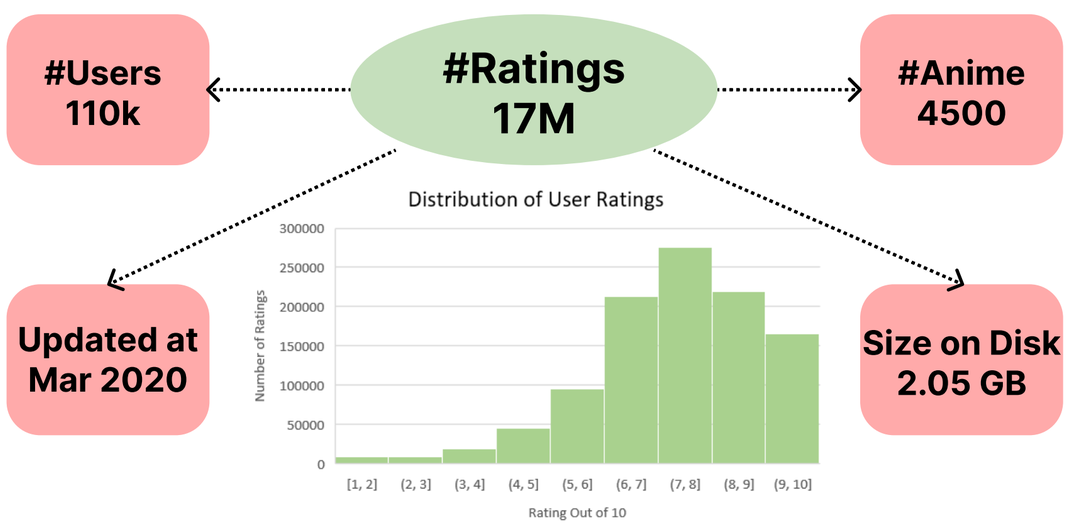
Georgia Tech

SUMMARY

Anime are Japanese animated TV shows that are extremely popular around the world. As avid anime fans, we wanted to watch a show together but realized it was difficult to reconcile our differing tastes. Thus we wanted to apply our **machine learning modeling and big data visualization skills** to figure out an effective method of selecting an anime we all like. This can help individuals or groups of people decide what anime to watch using a **recommendation system** with an interactive tool.

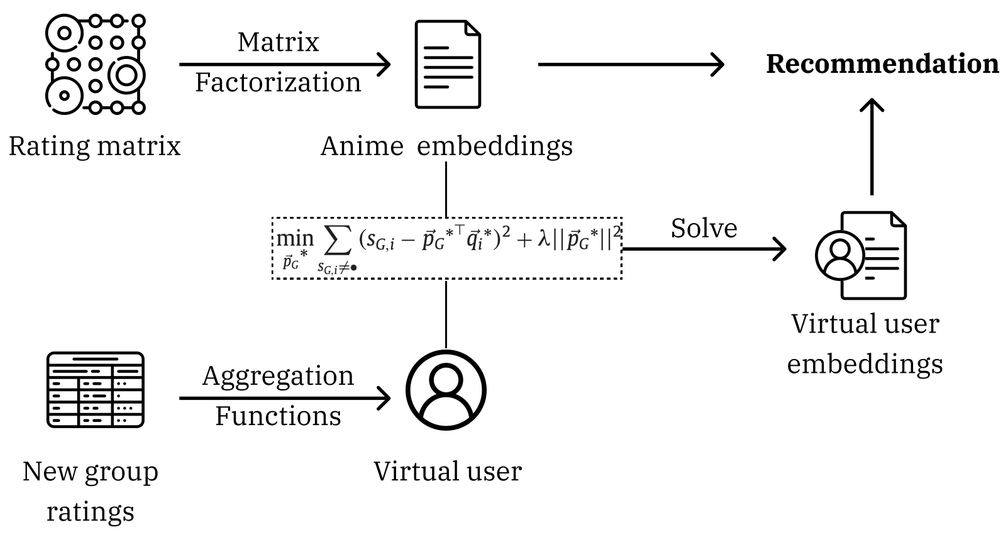
DATASET

We acquired the MyAnimeList data from Kaggle.



ALGORITHMS

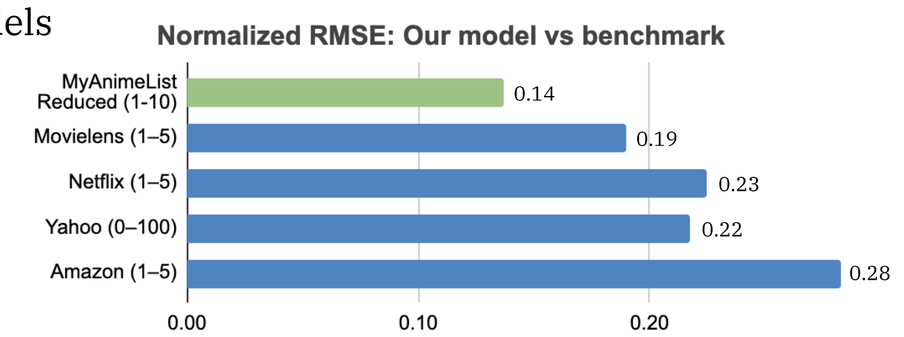
We used a Matrix Factorization approach based on Ortega et al. 2016, and added more aggregation functions, options for regularization factors and made it transparent to the users



EVALUATION

Matrix Factorization Evaluation:

We first evaluated our matrix factorization model against other models

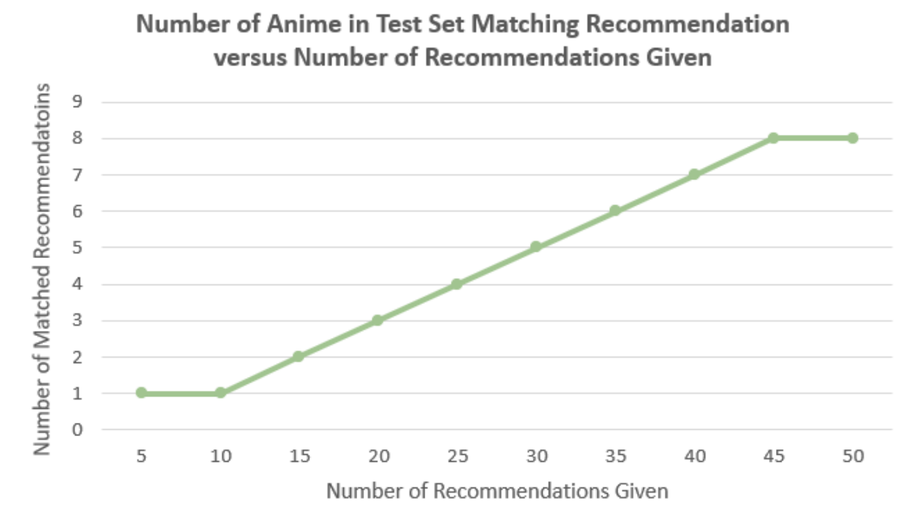


From this comparison, we found that our matrix factorization approach is effective in predicting user ratings for Anime.

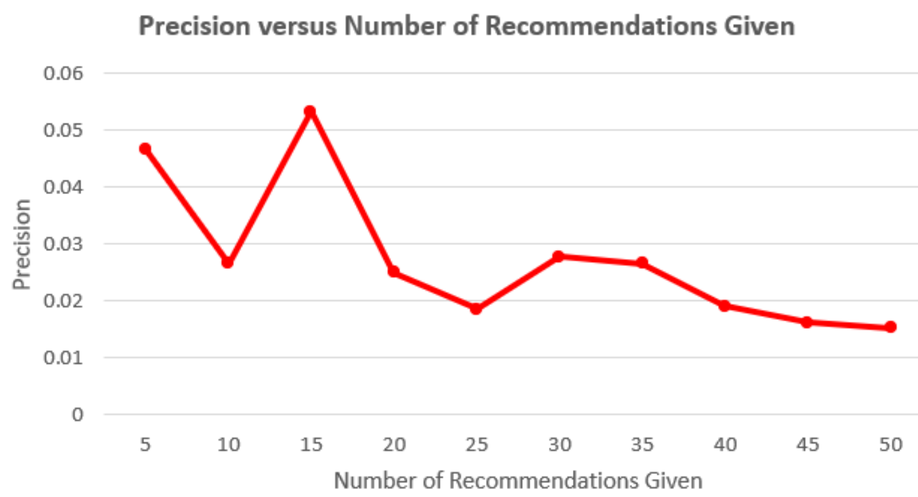
Group Recommendation Evaluation:

Precision is calculated across all group members at once:

$$\text{precision} = \frac{\text{True Positives}}{\text{True Positives} + \text{False Positives}}$$



All test data points appear in the top 50 recommendations, suggesting that our algorithm is producing novel recommendations



The precision of our recommendations is highest when we reveal 5 or 15 recommendations to the user.

INTERACTIVE APPLICATION