

Anime Reccomendation System



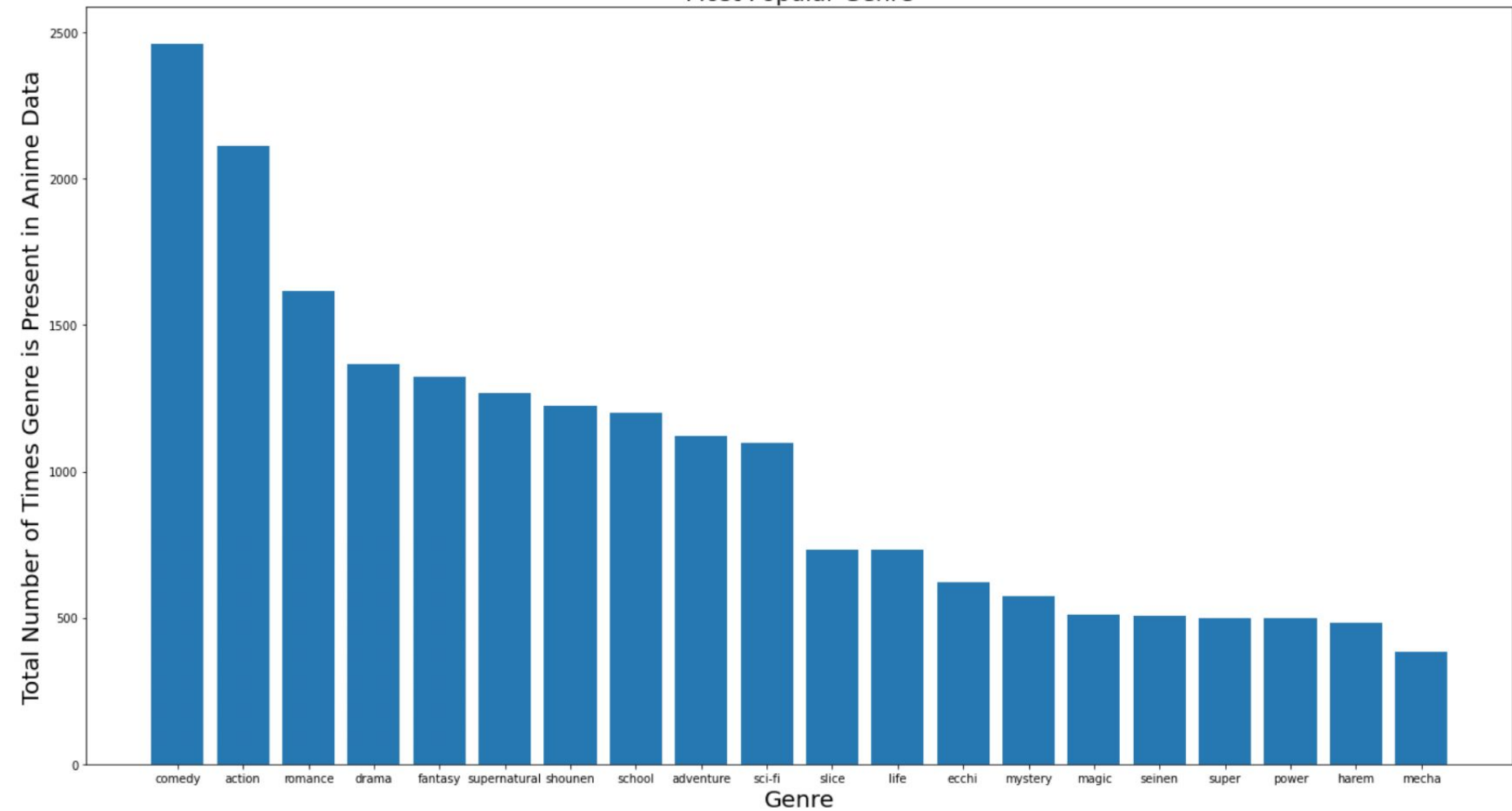
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Business Overview

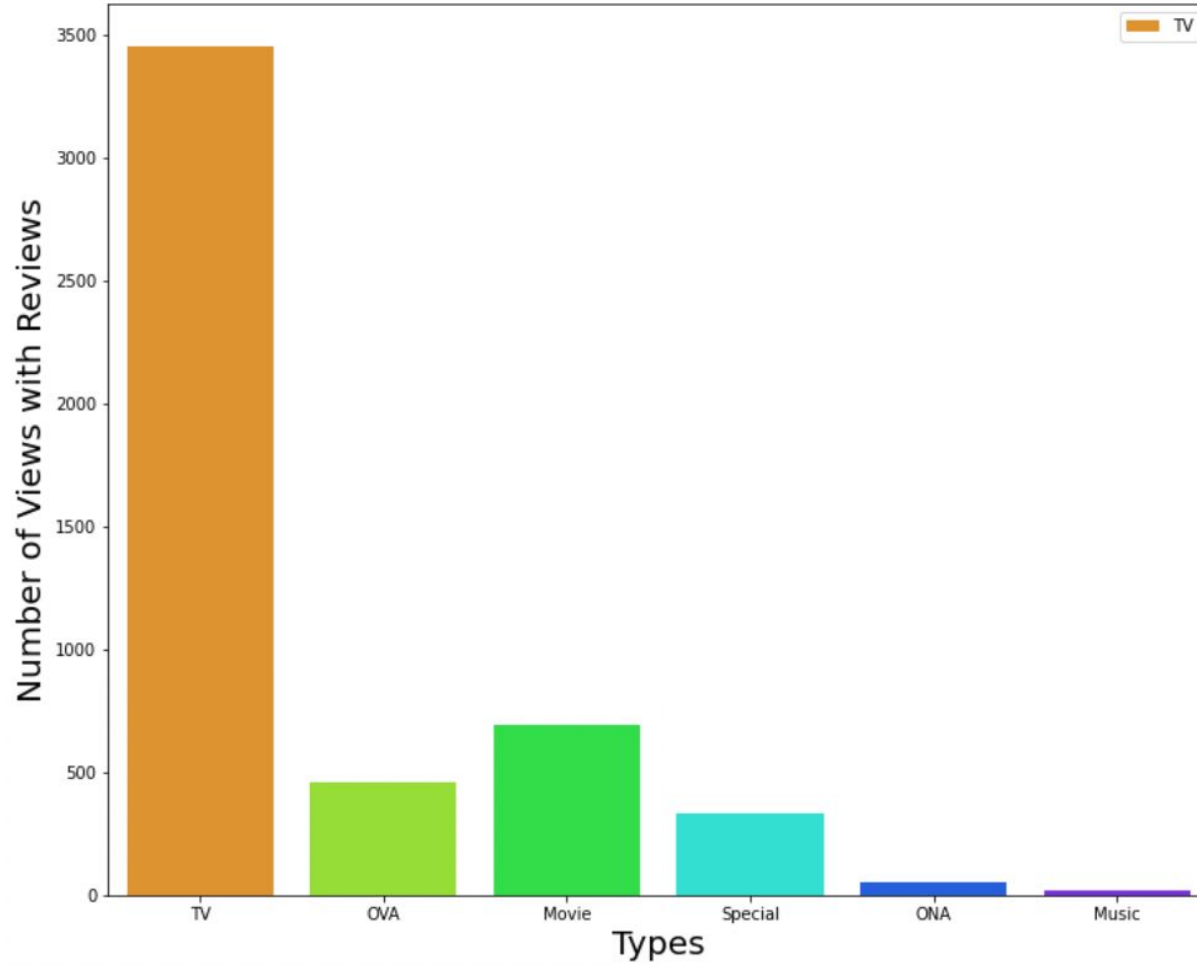
Anime is a hand drawn and computer animation originating from Japan. Its visual nature is a big part of its appeal to its viewers. 60 % of all animation originates from Japan. This reaches about 87% of the global population. This does not mean it is watched by 87% of the world. During uncertain times such as the covid19 pandemic, it is important to build strength and growth in areas that are holding a steady pace in order to help make up for the economic downturn in other sectors of each country's economy.

Japan has recently been one of the first to declare a nationwide recession due to covid19.

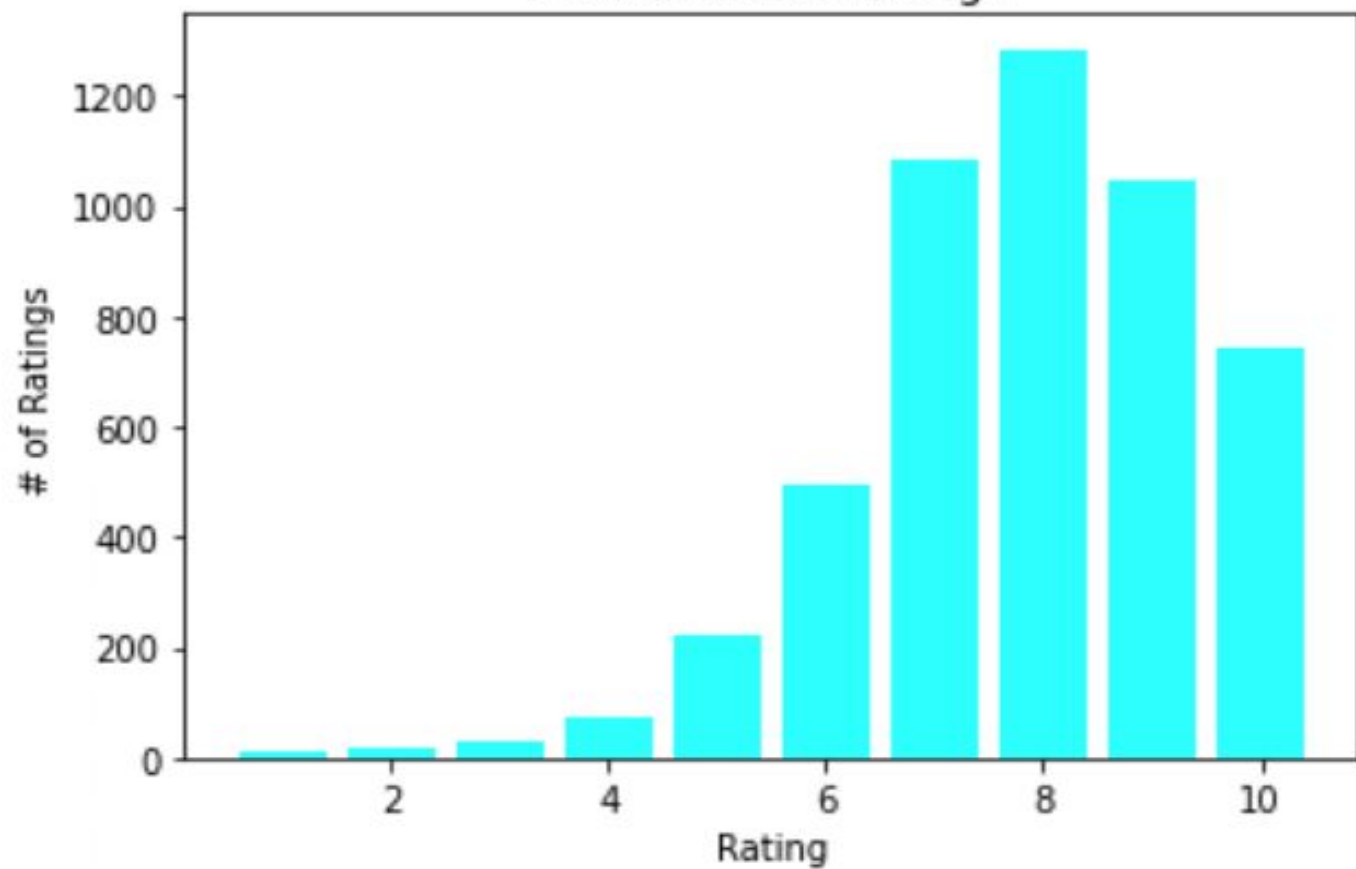
Most Popular Genre



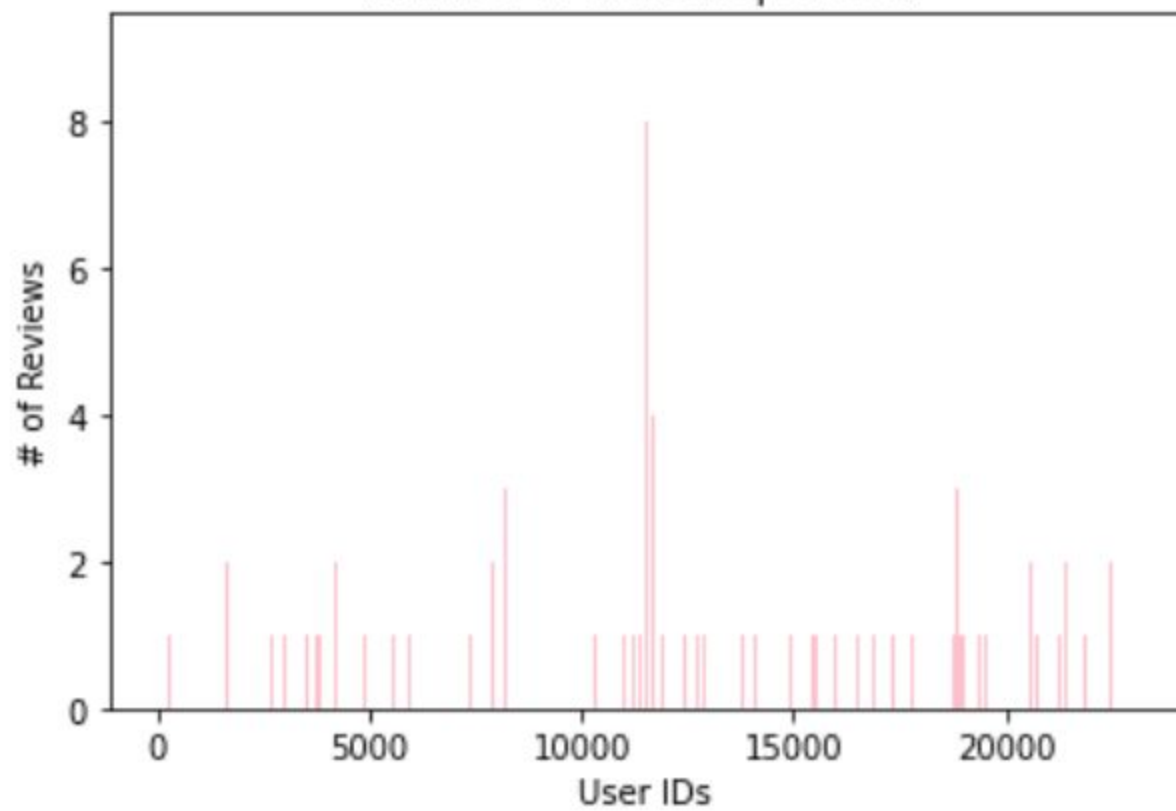
Most Viewed Anime



Distribution of Ratings



Number of Reviews per User



Methodology

- Created a baseline model using singular value decomposition (SVD).
- Will then introduce other models that are user and item based.
- GridSearchCV and cross-validation will also be conducted on all models

Baseline Model

```
{'rmse': 2.7752982992400335, 'mae': 2.6844}  
{'rmse': {'n_factors': 20, 'reg_all': 0.02}, 'mae': {'n_factors': 20, 'reg_all': 0.02}}
```

- The RMSE shows that there is no good or bad threshold for the base model.
(SVD)

Top Performing Model

KNNBaseline using pearson similarity, user based = False.

Evaluating RMSE, MAE of algorithm KNNBaseline on 3 split(s).

	Fold 1	Fold 2	Fold 3	Mean	Std
RMSE (testset)	2.7655	2.7418	2.7824	2.7632	0.0166
MAE (testset)	2.6701	2.6467	2.6879	2.6682	0.0169
RMSE (trainset)	2.7616	2.7735	2.7536	2.7629	0.0082
MAE (trainset)	2.6658	2.6781	2.6578	2.6672	0.0083
Fit time	0.41	0.40	0.23	0.35	0.08
Test time	0.02	0.03	0.01	0.02	0.01

Suggestions

- My current suggestions for my project are to go back and conduct an ALS model
- I have started on both an Alternating Least Squares model and a content based model
 - Content based model has used SVD to fit and obtained an explained variance ratio of .99633
 - Have not been able to further analyse similarities between TF-IDF
 - I would like to debug code and follow through with ALS and TF-IDF
- Additional models: decision trees,
- Go back and include unrated to see its impact on the recommendation system

Sources

<http://news.mit.edu/2013/the-soul-of-anime-0129>

<https://uk.reuters.com/article/uk-japan-economy-gdp/japan-slips-into-recession-worst-yet-to-come-as-pandemic-wreaks-havoc-idUKKBN22T0VF>

https://www.google.com/search?q=japan+first+to+claim+nationwide+recession&rlz=1C5CHFA_enGB891GB891&oq=japan+first+to+claim+nationwide+recession&aqs=chrome..69i57j33.6696j0j4&sourceid=chrome&ie=UTF-8