Anime Recommender System

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What is your research question? Clearly define the research problem/question.

- Objective is to design a recommendation system that recommends anime TV series and movies for a user based on previous anime ratings given by that user.

Why is this an interesting question to ask and why would we care about the answer to this question or a solution to the problem?

- There has been very few work and research on Anime recommendation and, looking at the popularity of this genre of Anime series and movies, a recommendation system specifically for this would help a large group of users to have relevant suggestions on their favorite topic.

Has any existing research work tried to answer the same or a similar question, and if so, what is still unknown?

- Many recommendations systems which we studied have implementations for general movie ratings and we found few work on Anime as well which deals with user clustering or Collaborative Filtering. As there is not much trials done on the same with other recommenders, we are planning to implement matrix factorization and deep learning which instead of using a fixed dot-product as recommendation, utilizes some dense layers so the network can find better combinations.

How do you plan to work out the answer to the question? (At the proposal stage, you are only expected to have a sketch of your methods.)?

- Plan is to take Anime Recommendation with Collaborative filtering and try to implement other recommenders (matrix factorization and deep learning approach) on that to see the relative performance and optimize the same. We are using anime data set that contains information on user preference data from 73,516 users on 12,294 anime.

How would you evaluate your solution? That is, how do you plan to demonstrate that your solution/answer is good or is reasonable?

- To evaluate our solution's performance, we are going to use RMSE (root mean square error) and MAE (mean absolute error) on the test data for different user's ratings. With different approaches that we are going to try, we will find the RMSE and MAE and will rate the recommendations of system inversely with the scores on test data.

A rough timeline to show when you expect to finish what. List a couple of milestones.

Timeline	Task
March 24 - March 31	Data preprocessing and CF Implementation
April 1 – April 7	Matrix Factorization Implementation
April 8 – April 21	Deep Learning Implementation
April 22 – April 28	Comparative Analysis of performance and Report