Recommendation Systems Milestone 2

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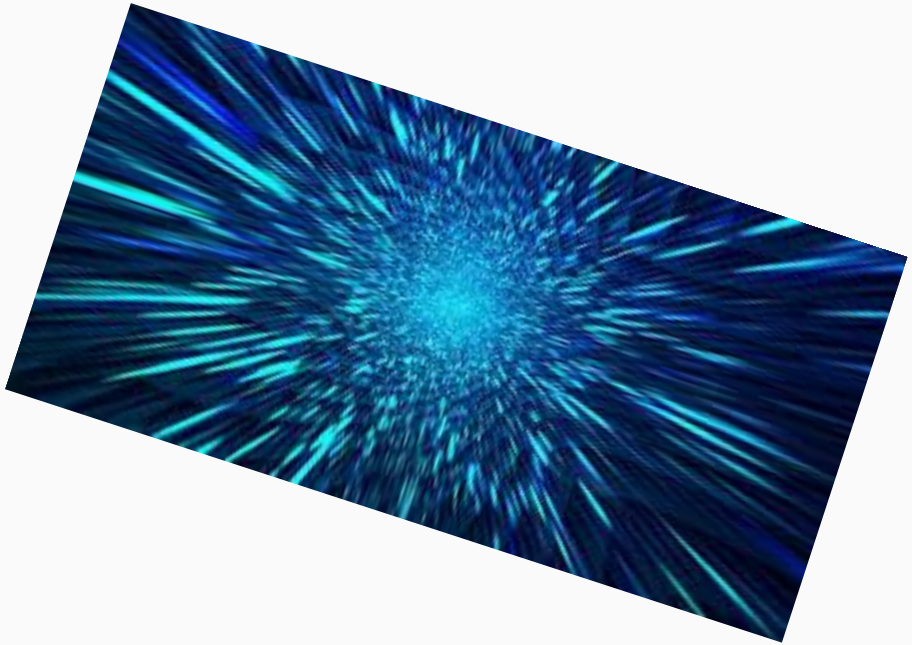
Refined Insights



The most meaningful insights from the data relevant to the problem?

I. The item-item, user-user and matrix factorization models provided accurate and reliable recommendations from the data

II. Increased Recall from Matrix Factorization provided best results

III. Recommendations based on different desired information based on user ID, song ID, and play count were executed.

Comparison of techniques and performance

How do different techniques perform? Which one is performing relatively better? Is there scope to improve the performance further?

I. Using the Cluster based model was fairly dismissed as the new model changed very little, and although the predictions were fairly done, it could be improved based on the ability to group data properly.

II. Matrix Factorization and Content based Recommendations were fairly well executed as Matrix Factorization provided high recall that was noted compared to all other models and Content based recommendation included information regarding extracted features from the text data. This helped find similarities between songs using these features using cosine function.

Proposal for the final solution design

➢ **What model do you propose to be adopted?**

- I propose that Matrix Factorization be adopted due to its high recall efficiency and its ability to provide data that is relatively higher in precision and recall compared to other models making the data recommendations more relevant.
- F_1 score was also the highest compared to all other models meaning the model performed well.

➢ **Why is this the best solution to adopt?**

This is the best solution also to adopt because of its ability to categorize data in a personalized recommendation system, the recommendations are based on the past behavior of the user and it is not dependent on any additional information tracking the behavior and similarities of the data to the predictions/recommendations.