

Enhanced Recommendation System: Leveraging Multiple Rankers for Improved Recommendation Relevancy

Participants:

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Problem statement

In the 2022 RecSys Challenge, the task is to predict the fashion item a user will purchase at the end of a browsing session. While various recommendation approaches exist, capturing the subtle dynamics of user behavior within a session remains a key challenge. Standard methods often treat each item interaction independently, neglecting the sequential nature of the session and potentially missing crucial purchasing signals.

Innovation objective

Our primary objective is to significantly enhance the accuracy and relevance of recommendations provided by the system by leveraging the strengths of multiple rankers and implementing smart aggregation techniques on the generated ranks.

As represented in the paper, the authors utilize multiple models to obtain recommendation candidates. Building upon this insight, our proposed innovation suggests employing multiple models to rank the recommendation candidates. This approach aligns with the notion of leveraging diverse perspectives and algorithms to enhance recommendation accuracy and relevance. By integrating various rankers, such as catBoost, XGBoost, etc., into the ranker ensemble, we aim to enrich the recommendation process with a diverse set of ranking methodologies. Additionally, advanced manipulation techniques will be applied to refine the rankings generated by these models, ensuring that the final recommendations are tailored to individual session preferences and context.

Performance evaluation

Metric

As we would like to compare our results with the other submissions for the RecSys 2022 challenge we will also use the **MRR@100** (Mean Reciprocal Rank at the first 100 items recall) metric as our evaluation metric.

Baseline

The 10th place team in the challenge managed to score 0.1994 MRR by using an ensemble of 10 different rankers and we will compare our results with that value.

Experimentation plan

we aim to assess each model independently to understand its performance in recommendation ranking. Subsequently, we will integrate these models into the ranker assembler framework and apply smart aggregation techniques simultaneously. By testing the models individually and in combination with manipulation methods, we seek to evaluate their effectiveness in enhancing recommendation relevance. Throughout the experimentation process, we will use the evaluation metrics mention above to measure the quality and accuracy of recommendations generated by the enhanced system.