

Introduction

Collaborative Representation Learning with Interest Sustainability (CRIS)

- Take a totally different approach to model the concept drift of users.
- The key of this method is to recommend items based on the interest sustainability score (ISS), which is a score of how much users' interest in each item will sustain in the future.
- Prior to training the recommendation model, we first compute the ISS of each item by training a neural classifier in a supervised manner.
- Based on the predicted ISS of each item, the propose a metric learning framework to make users closer to the items with high ISSs in the representation space than those with low ISSs, thereby recommending items that would be attractive to users in the deployment time.

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Potential conflict between modeling the ISSs and the original objective of the metric learning

- For example, an item consumed by a user should be close to the user according to the original objective, but if the ISS of the item is low the item is forced to be distant from the user, which prevents the recommendation system from fully learning the user's preference for items.
- In the light of this issue, we further improve the method with prototypes to relieve the conflicts between the objectives.