## Introduction

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.

## Related Work

## Recommender System

- General Recommender Systems
  - Matrix factorization (MF), Bayesian personalized ranking (BPR)
  - Collaborative Metric Learning (CML), Symmetric metric learning (SML)
- Sequential Recommender Systems
  - Caser (base on CNNs), Hierarchical gating network(HGN), SASRec (Self-attention)