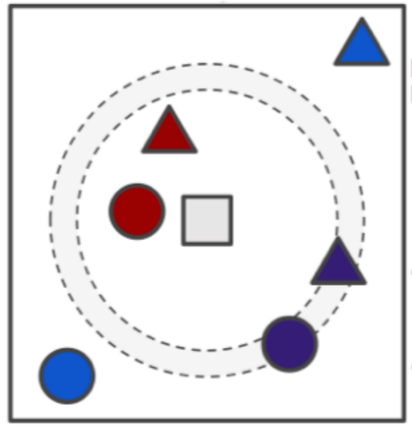
Proposed Method

Prototype Learning



(b) CRIS^{reg}

- A limitation in the metric learning framework with the ISS, there can be potential conflicts between two objectives because an anchor (i.e. a user) is shared to optimize both objectives, L_C and L_S.

- For example, positive item of a user can have low ISS, thus consequently the positive item can be distant from the user. (Fig.4b) Therefore, modeling the ISS can prevent the recommendation system from fully learning the user's preference for items.

Proposed Method

Prototype Learning

- To alleviate such conflicts, further extend the metric learning framework with prototypes, which are trainable points in the representation space.
- In this work, design each prototype to be responsible for optimizing one objective. The intuition is to disentangle two objectives by using two types of anchors (prototypes) instead of a single type of anchors (users).