

Experiments

Evaluation Protocol

- Used user-item interactions in the least one month as test data, and the others as training data, then set the interactions in the latest one month in the training data as validation data.
- Removed users and items, which don't appear in the training data, from the validation and test data.
- As metrics, adopt hit ratio ($H@k$) and normalized discounted cumulative gain ($N@k$) to evaluate the ranking performance.
- Due to space limitation, report results with $k = 10$, ran system 5 times and averaged results.

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Methods Compared

- CML (metric learning method): models users' preference to items with a metric instead of inner product.
- SML (metric learning method): state-of-the-art method enhancing CML by including a item-centric metric and trainable margins.
- NTF: utilizes timestamp of interaction to capture user's periodical behaviors by extending tensor factorization with a neural network.
- Caser: sequential recommender system based on CNNs to extract local features from the sequence of users' consumption.
- SASRec: consider pair-wise interaction between items in the sequence of users' consumption via self-attention mechanism.
- TiSARec: extends SASRec by exploiting the time interval between two consecutive in the sequence of users' consumption.
- HGN: state-of-the-art sequential recommender system based on a hierarchical gating network to capture long/short term interaction
- $CRIS^{reg}$
- $CRIS^{wt}$: straightforward method to utilize the ISS with the learning method. $\rightarrow Score(u, i) = (p_i)^\lambda \cdot (-d(u, i))$
- CRIS