

A completely locale-independent session-based recommender system by leveraging trained model

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Task Description

Dataset: Amazon-M2

- User Sessions: locale, prev_items, next item
- Product attributes: title, price, brand, description, etc..

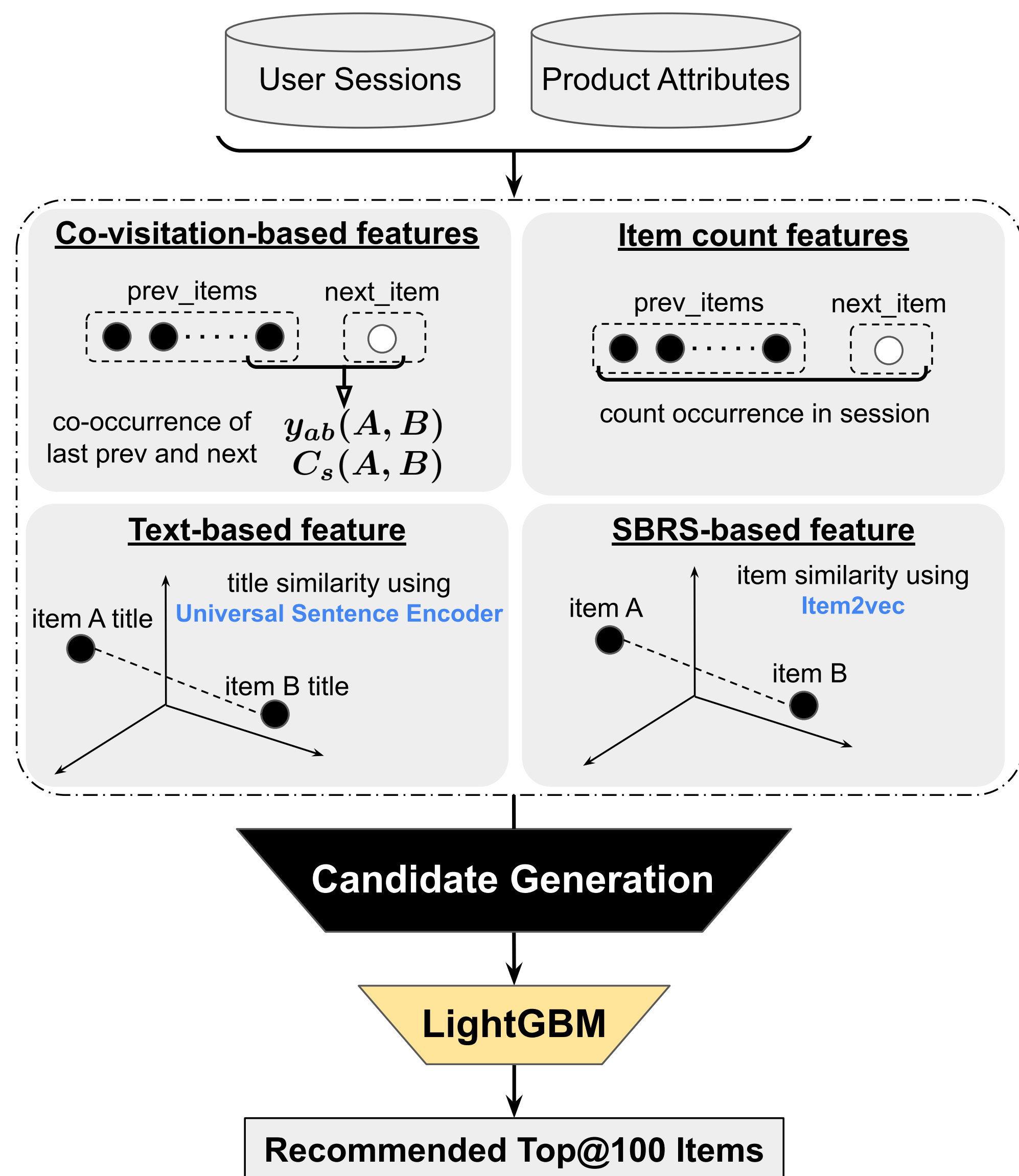
Task

- Task 1 and 2: Predict the next item from prev_items
- Task 2 target locales where **train data is insufficient**
- Evaluation metric: MRR@100

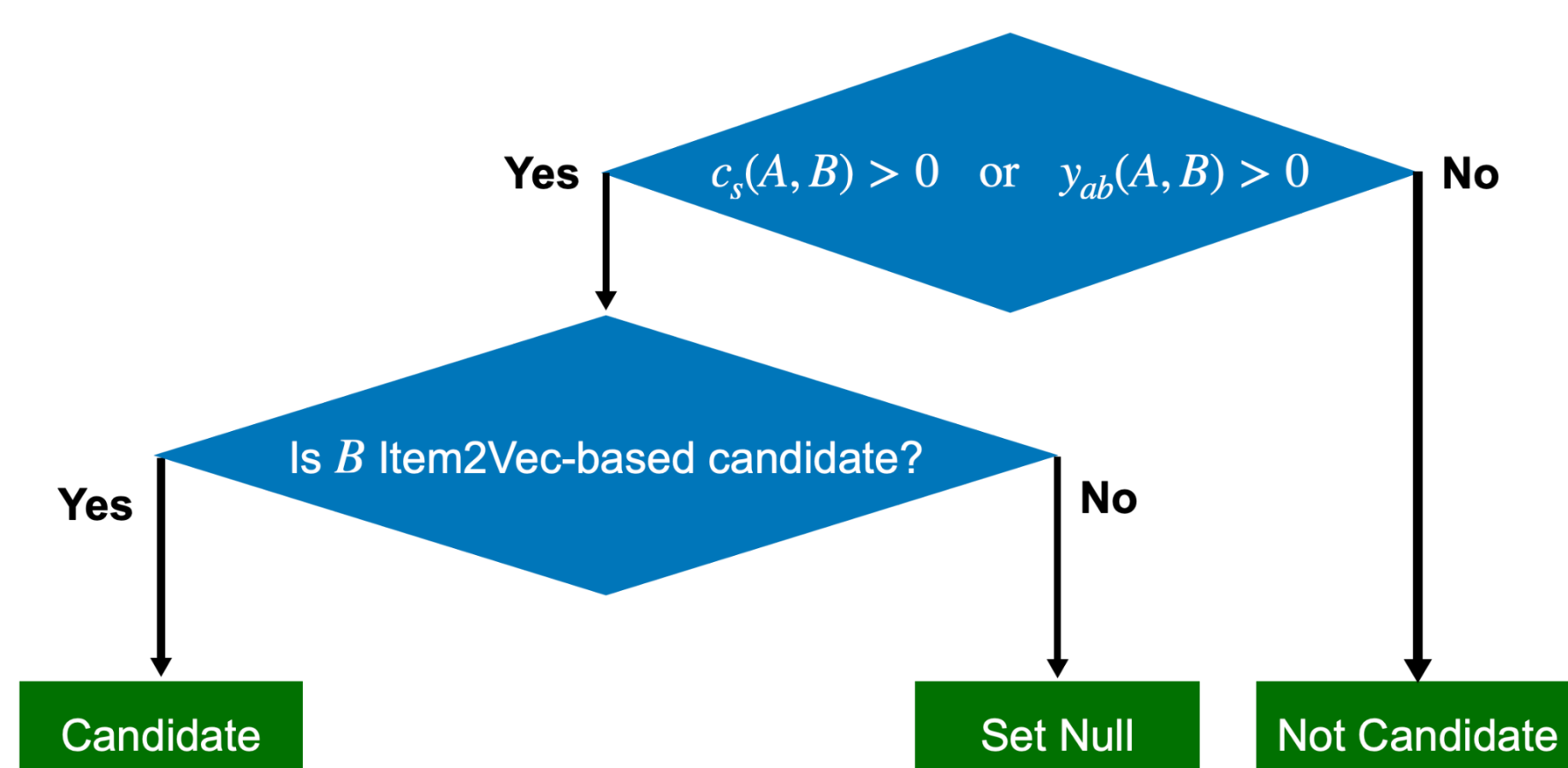
→ We won the 10th prize in Task2

Solution

Overview



Candidate Generation



If candidate < 100

→ Fill candidates of other methods

Experiment

Objective

- Improve the score on Task 2
- **Applied the pre-trained model to Task 1**

Setting

- 5-fold cross validation
- Locale Group Naming
 - SL(Sufficient Data Locales): DE, JP, UK
 - IL(Insufficient Data Locales): ES, FR, IT
- Sampling the SL's candidates (it's so large!)

Result

MRR Comparison (Leader Board)

Task1

Task2 data-only



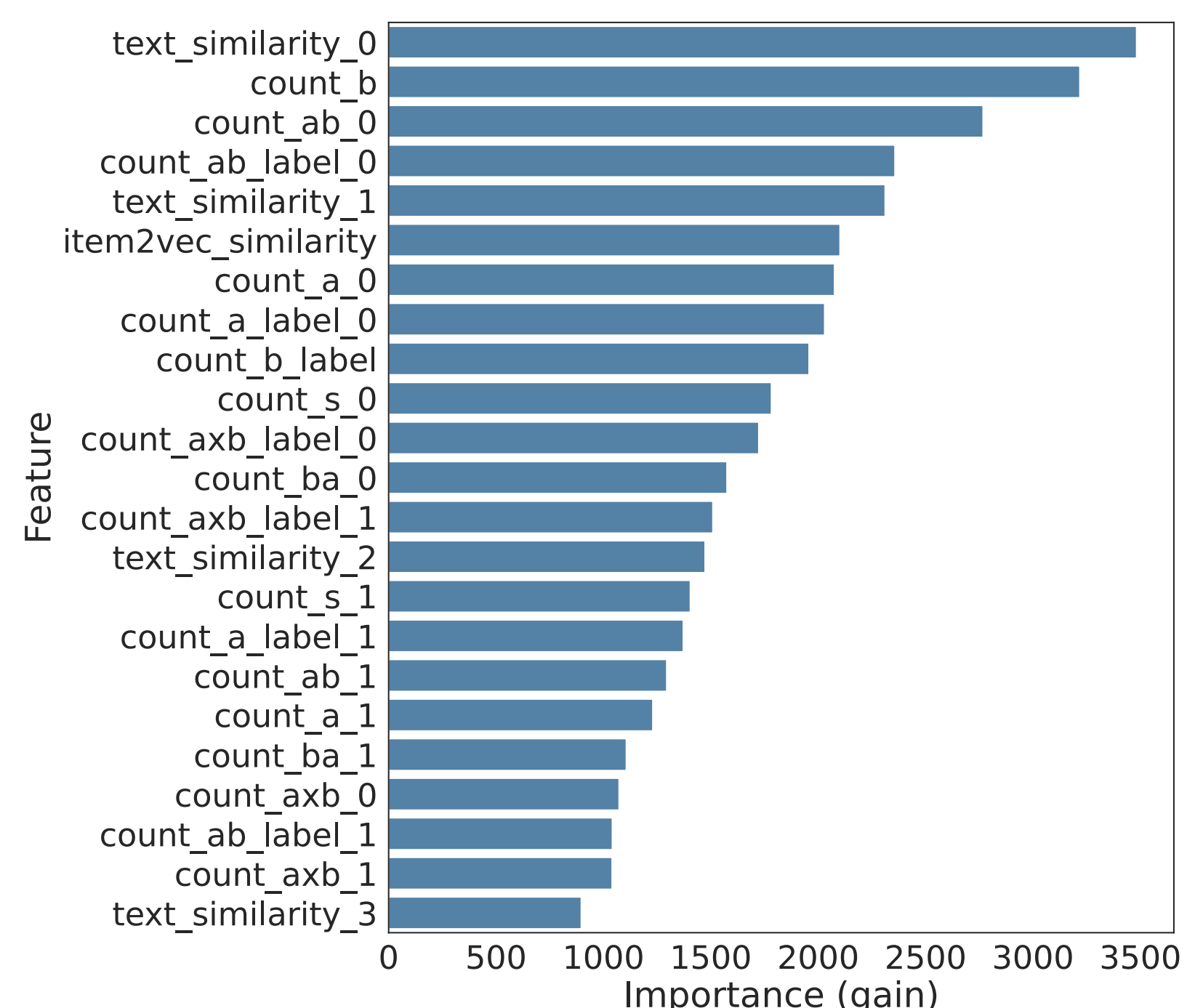
Task 1 data-only

Task2

Improved 0.88%
by adding SL

Training Data Locales	Task 1	Task 2
IL	0.37584	0.43718
SL	0.37113	0.41827
IL + DE	0.37893	0.44008
IL + JP	0.38010	0.44007
IL + UK	0.38055	0.43996
(IL + DE) + (IL + JP) + (IL + UK)	0.36975	0.44007
IL + SL	0.37065	0.44101

Feature Importance (top-20)



*The number in each feature name represents the distance of the prev_item to the next_item (0 is the latest).

Findings

- Large training data potentially unnecessary as small data transfers may sufficed
- High feature importance about more latest prev products

Summary and Future Work

- We demonstrated a significant efficacy even with a small data transfer by **leveraging locale-independent model**
- Explore more efficient methods for narrowing down the candidates (especially in Task 1)