Experiments

Effect of Periods

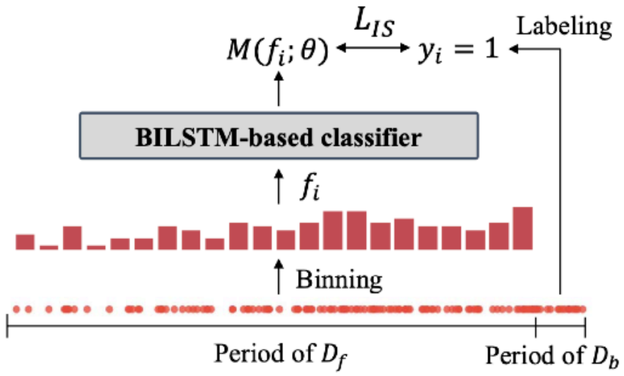
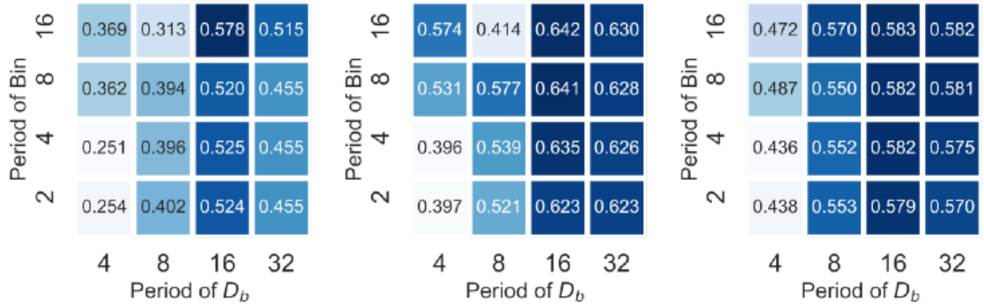


Fig. 2: Training process of a propose classifier on the interest sustainability prediction.



(a) Clothing (b) Kindle (c) GoodReads

Fig. 8: Sensitivity analysis on the periods of data D_b and frequency bins. The numbers in both axes denote the number of weeks.

- Performances are sensitive to the period of D_b, and long periods show the best perf.
- Speculate the period of data D_b should be long enough to reliably determine whether an item will be consumed in the future.
- Second, the long period of the frequency bins generally shows better classification performances. If the period too short, will makes feature of items noisy.
- Therefore, adjusting these two periods is essential to successfully predicting the interest sustainability of items.

Experiments

Qualitative Results

- Show distribution of features assigned by the neural classifier as the positive or negative class.
- Select the most confident 100 predictions for each class tends to gradually increase over time, positive class tends to decrease over time.
  - Reassert the necessity of the sequential feature and the sequence encoder to capture the temporal dynamics of users' pattern.

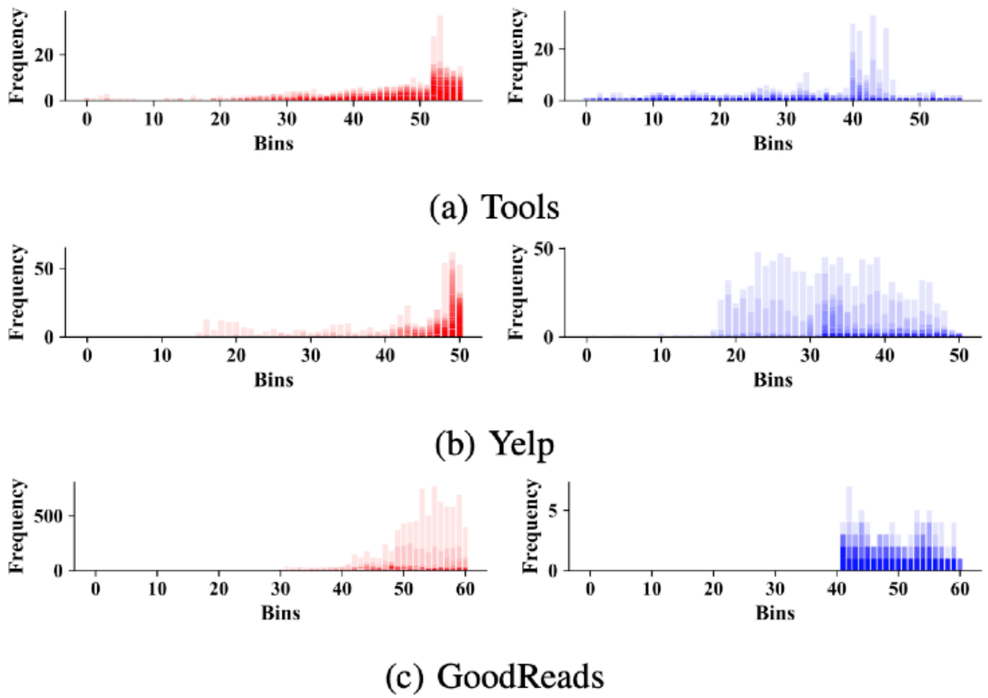


Fig. 9: Distribution of features associated with the most confident 100 predictions in each class. Left and right figures represent the features classified as positive and negative, respectively.