Proposed Method

Interest Sustainability Prediction

- Prior to training the recommender system, train a neural classifier, which predicts whether each item will be consumed in the future, to obtain the ISS for each item.
- Consider that we have user-item interaction data D such that:
  - $D = \{(u, i, t) \mid \text{user } u \text{ consumed item } i \text{ at time } t\}$
  - D: general source to train recommender systems.

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Interest Sustainability Prediction

- First divide D chronologically such that $D = D_f \| D_b$.
- D_f, D_b denote the front, back part
- All interactions in D_f are precedent to any interaction in D_b.
- $\|$ is concatenation operation.

- The divided data D_f and D_b are used for building input and labels:
  - $Input : i,$ item i that appears in D_f.
  - $Label : y_i = \begin{cases} 1, & \text{if } i \text{ appears in } D_b. \\ 0, & \text{otherwise.} \end{cases}$
- The goal is to predict whether item i, which appears in D_f, will be consumed in the future.