## December 1, 2021

## Abstract

## 1

## **Algorithm 1** Framework of ensemble learning for our system.

**Input:** The set of positive samples for current batch,  $P_n$ ; The set of unlabelled samples for current batch,  $U_n$ ; Ensemble of classifiers on former batches,  $E_{n-1}$ ;

**Output:** Ensemble of classifiers on the current batch,  $E_n$ ;

- 1: Extracting the set of reliable negative and/or positive samples  $T_n$  from  $U_n$  with help of  $P_n$ ;
- 2: Training ensemble of classifiers E on  $T_n \cup P_n$ , with help of data in former batches;
- $3: E_n = E_{n-1} cup E;$
- 4: Classifying samples in  $U_n T_n$  by  $E_n$ ;
- 5: Deleting some weak classifiers in  $E_n$  so as to keep the capacity of  $E_n$ ;
- 6: **return**  $E_n$ ;