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**Algorithm 1** The EasyEnsemble algorithm

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- 1: {Input: A set of minority class examples  $P$ , a set of majority class examples  $N$ ,  $|P| < |N|$ , the number of subsets  $T$  to sample from  $N$ , and  $s_i$ , the number of iterations to train an AdaBoost ensemble  $H_i$ }
  - 2:  $i \leftarrow 0$
  - 3: **repeat**
  - 4:    $i \leftarrow i + 1$
  - 5:   Randomly sample a subset  $N_i$  from  $N$ ,  $|N_i| = |P|$ .
  - 6:   Learn  $H_i$  using  $P$  and  $N_i$ .  $H_i$  is an AdaBoost ensemble with  $s_i$  weak classifiers  $h_{i,j}$  and corresponding weights  $\alpha_{i,j}$ . The ensemble's threshold is  $\theta_i$ , i.e.  
$$H_i(x) = \text{sgn}(\sum_{j=1}^{s_i} \alpha_{i,j} h_{i,j}(x) - \theta_i)$$
  - 7: **until**  $i = T$
  - 8: Output: An ensemble:  
$$H(x) = \text{sgn}(\sum_{i=1}^T \sum_{j=1}^{s_i} \alpha_{i,j} h_{i,j}(x) - \sum_{i=1}^T \theta_i).$$
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