

```
1: Start with  $\mathbf{w} = \mathbf{0}$ 
2: while there is a wrongly-classified  $\mathbf{x} \in S$  do
3:   if  $\mathbf{x} \in S_1$  then
4:      $\mathbf{w} \leftarrow \mathbf{w} + \mathbf{x}$ 
5:   else
6:      $\mathbf{w} \leftarrow \mathbf{w} - \mathbf{x}$   $\{/* \mathbf{x} \in S_2 */\}$ 
7:   end if
8: end while
```