
Algorithm 1 Algorithmmn of Perceptron

Input: $T = \{(x_1, y_1), \dots, (x_N, y_N)\}$, where $x_i \in \mathcal{X} = R^n, y_i \in \mathcal{Y} = \{-1, +1\}$; learning rate η

Output: w, b

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1:  $w \leftarrow 0 \in R^n; b \leftarrow 0$ 
2: while True do
3:   for  $(x_i, y_i)$  in  $T$  do
4:     if  $y_i(w \cdot x_i) \leq 0$  then
5:        $w \leftarrow w + \eta y_i x_i$ 
6:        $b \leftarrow b + \eta y_i$ 
7:     end if
8:   end for
9:   if no sample in  $T$  is misclassified then
10:    break
11:   end if
12: end while
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实例点 (x_i, y_i) 被用于更新的次数越多, 意味着它离超平面越接近, 也就越难以正确分类. 这样的实例对学习结果影响最大