

Perceptron Learning Algorithm

```
Initialize  $w_0, \dots, w_d$           /* either all  $w_i=0$  or, more typically, a small random number */
Until <stopping condition>          /* Example: Until no weights change */
    Randomly order the data  $\langle x^1, \dots, x^N \rangle$ 
    For  $j = 1$  to  $N$  do
        if  $\mathbf{w} \cdot \mathbf{x}^j \geq 0$  then  $h=1$  else  $h=0$ 
        For  $i = 0$  to  $d$  do
             $w_i = w_i + \alpha \times (y^j - h) \times x_i^j$           /* Perceptron learning rule */
```