Perceptron

Binary classifier $\bar{w}^T f(\bar{x}) \overset{?}{>} 0$

↳ $y \in \{-1, +1\}$

for t up to epochs:

  for i up to D:

    $y_{pred} \leftarrow \bar{w}^T f(\bar{x}^{(i)}) \overset{?}{>} 0$

    $\bar{w} \leftarrow \bar{w}$ if $y_{pred} = y^{(i)}$

    else $\bar{w} \leftarrow \bar{w} + \alpha f(\bar{x}^{(i)})$ if $y^{(i)} = +1$

    else $\bar{w} \leftarrow \bar{w} - \alpha f(\bar{x}^{(i)})$ if $y^{(i)} = -1$

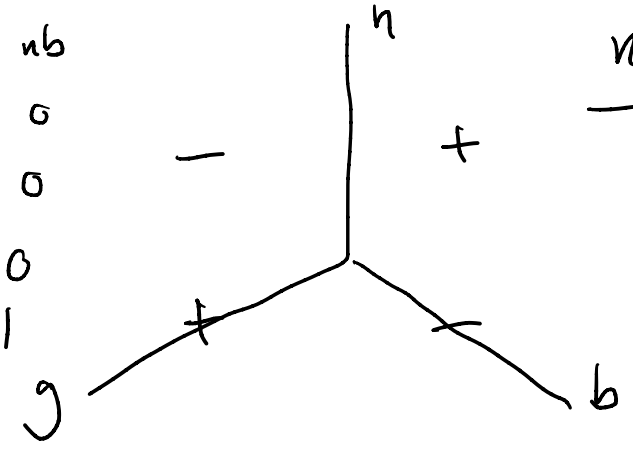
Ex:

		y	$f(\bar{x})$ mgbn	$\bar{w}$	$\alpha = 1$
				0000	
ep1	movie good	+1	1100	1100	$y_{pred} = -1$
	movie bad	-1	1010	0 1 -1 0	$y_{pred} = +1$
	not good	-1	0101	0 0 -1 -1	$y_{pred} = +1$
ep2	movie good	+1	1100	1 1 -1 -1	$y_{pred} = -1$

Ex 2

	y	g	b	n	ng	nb
good	+1	1	0	0	0	0
bad	-1	0	1	0	0	0
not good	-1	1	0	1	1	0
not bad	+1	0	1	1	0	1

↳ Add bigrams



not separable