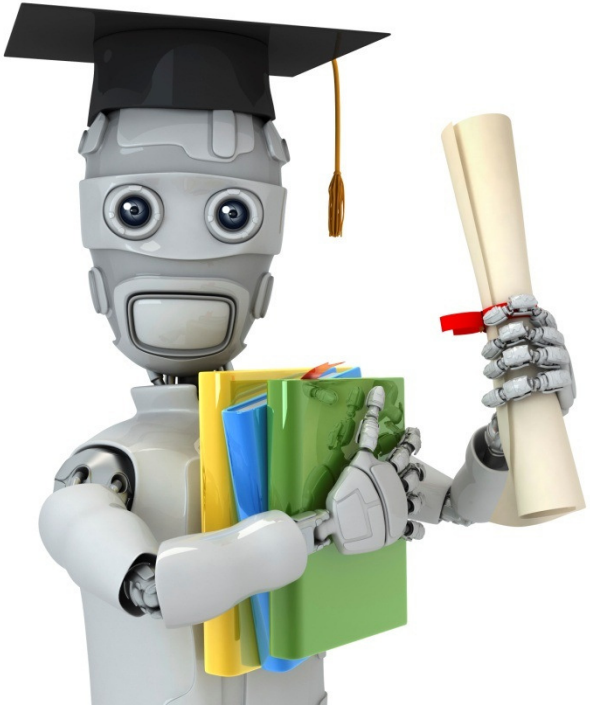


Machine Learning

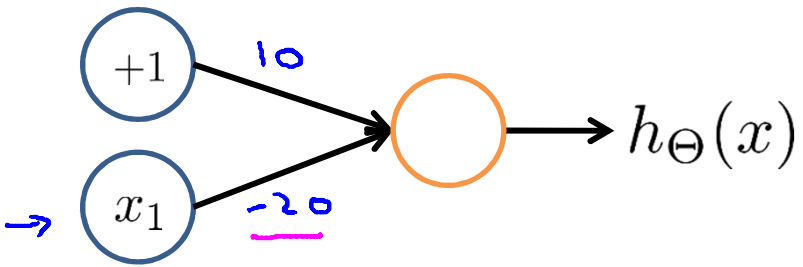
Neural Networks: Representation

Examples and intuitions II

x_1 AND x_2 x_1 OR x_2 $\{0,1\}$.

Negation:

NOT x_1



x_1	$h_\Theta(x)$
0	$g(10) \approx 1$
1	$g(-10) \approx 0$

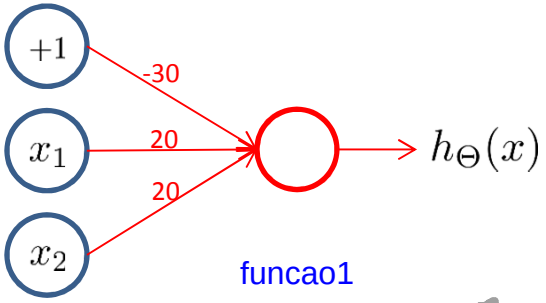
$$h_\Theta(x) = g(10 - 20x_1)$$

(NOT x_1) AND (NOT x_2)

(=1 if and only if $x_1 = x_2 = 0$

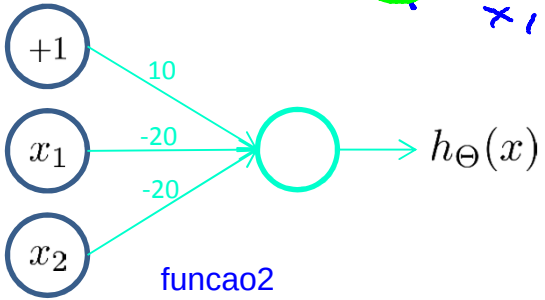
esta função= funcao1 V funao2

Putting it together: x_1 XNOR x_2



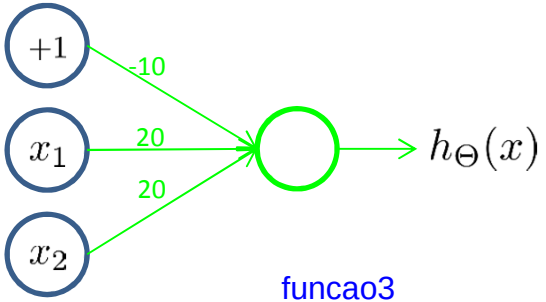
funcao1

$\rightarrow x_1$ AND x_2



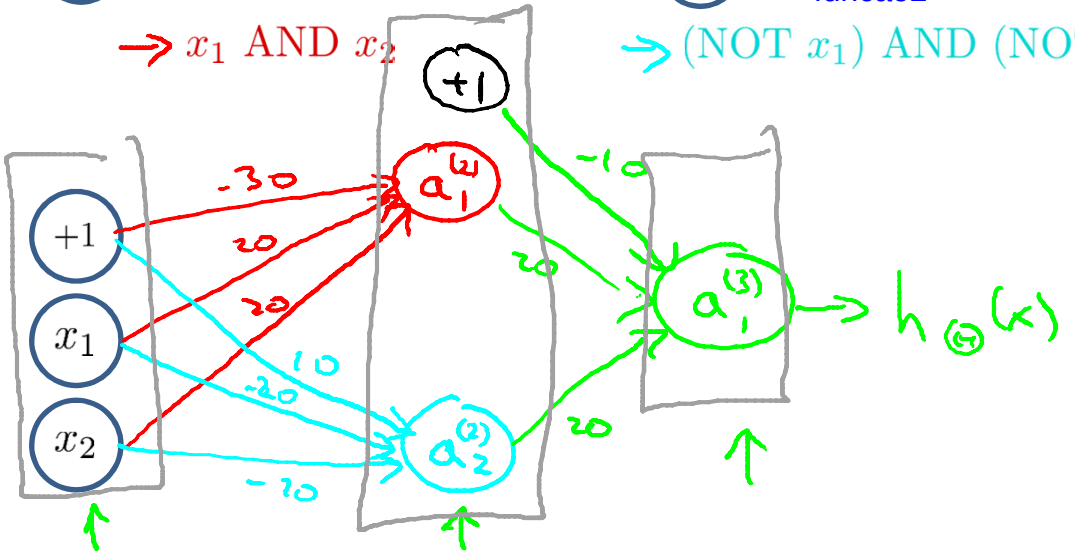
funcao2

$\rightarrow$ (NOT x_1) AND (NOT x_2)

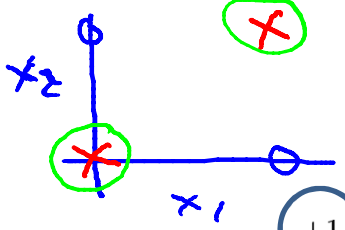


funcao3

$\rightarrow x_1$ OR x_2

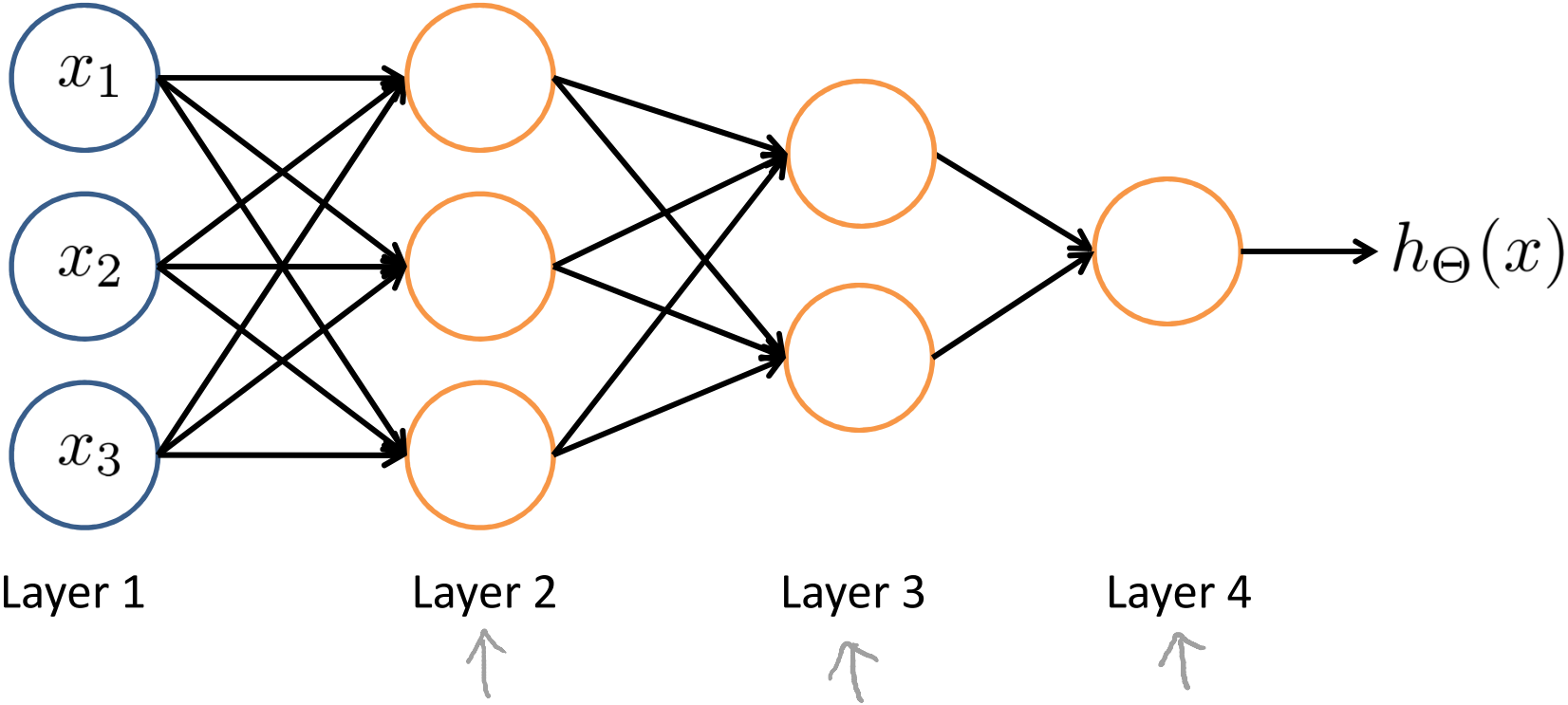


x_1	x_2	$a_1^{(2)}$	$a_2^{(2)}$	$h_\Theta(x)$
0	0	0	1	1
0	1	0	0	0
1	0	0	0	0
1	1	1	0	1

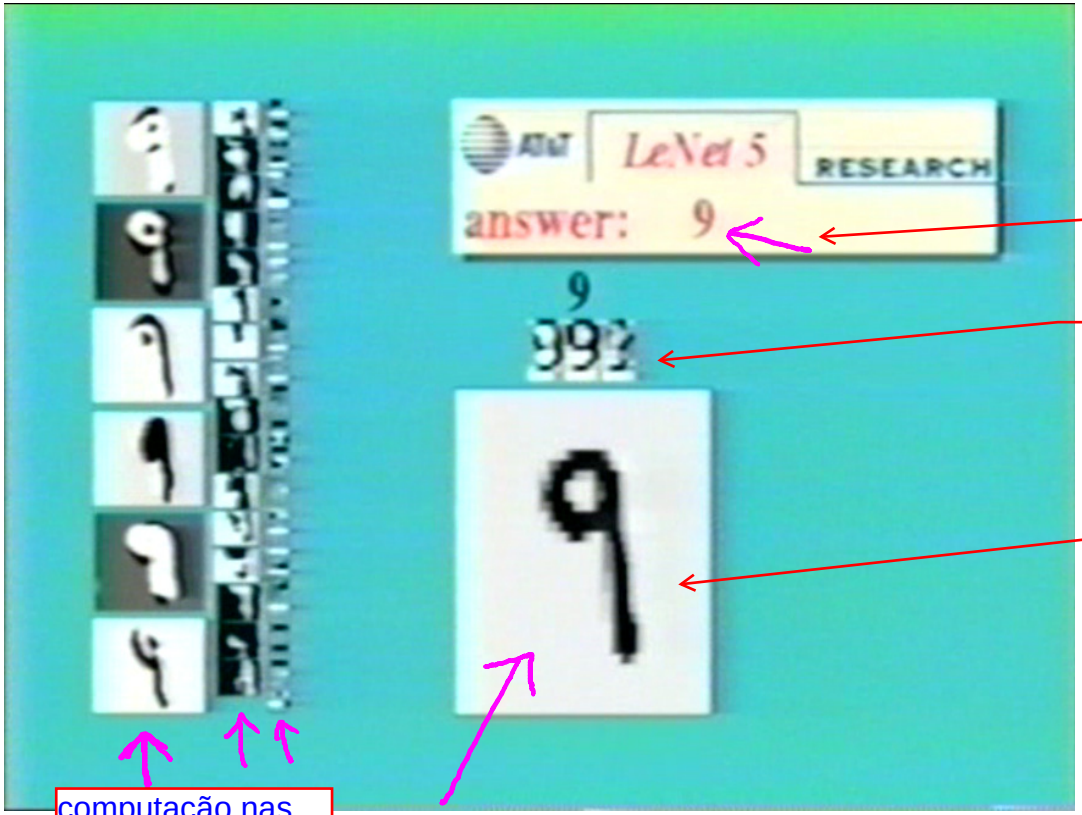


Neural Network intuition

permite calcular
funçao
extremamente
complexas

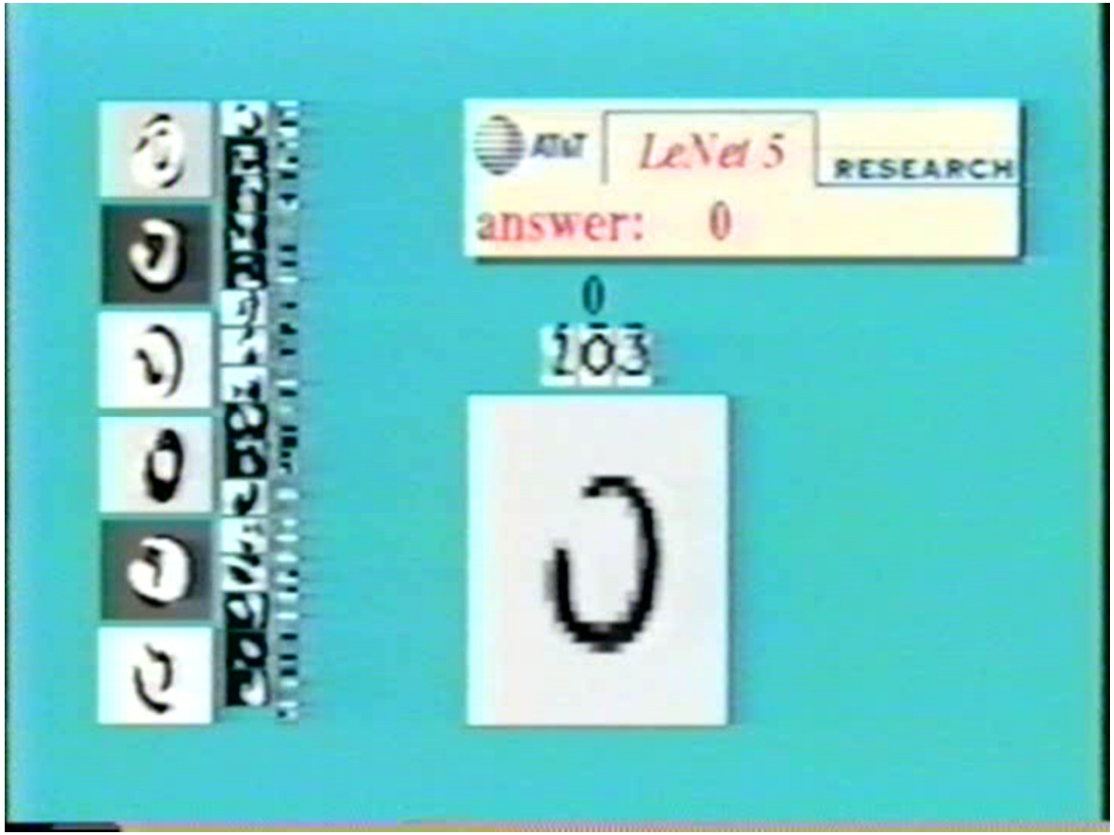


Handwritten digit classification



[Courtesy of Yann LeCun]

Handwritten digit classification



[Courtesy of Yann LeCun]