Neural networks

Feedforward neural network - artificial neuron

ARTIFICIAL NEURON

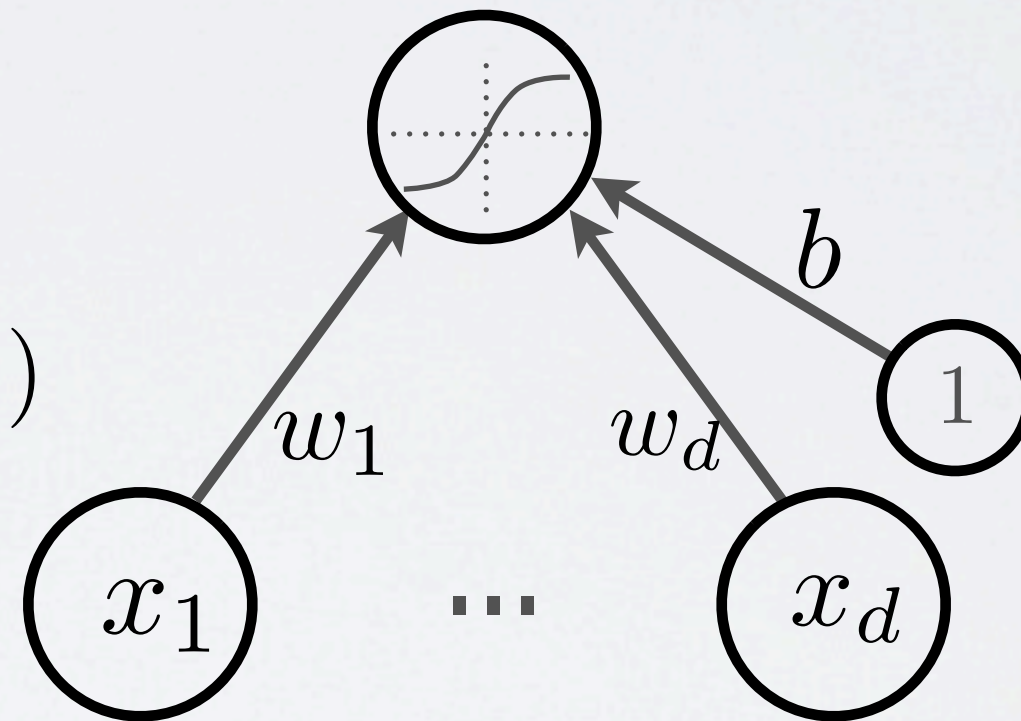**Topics:** connection weights, bias, activation function

• Neuron pre-activation (or input activation):

$$a(\mathbf{x}) = b + \sum_i w_i x_i = b + \mathbf{w}^\top \mathbf{x}$$
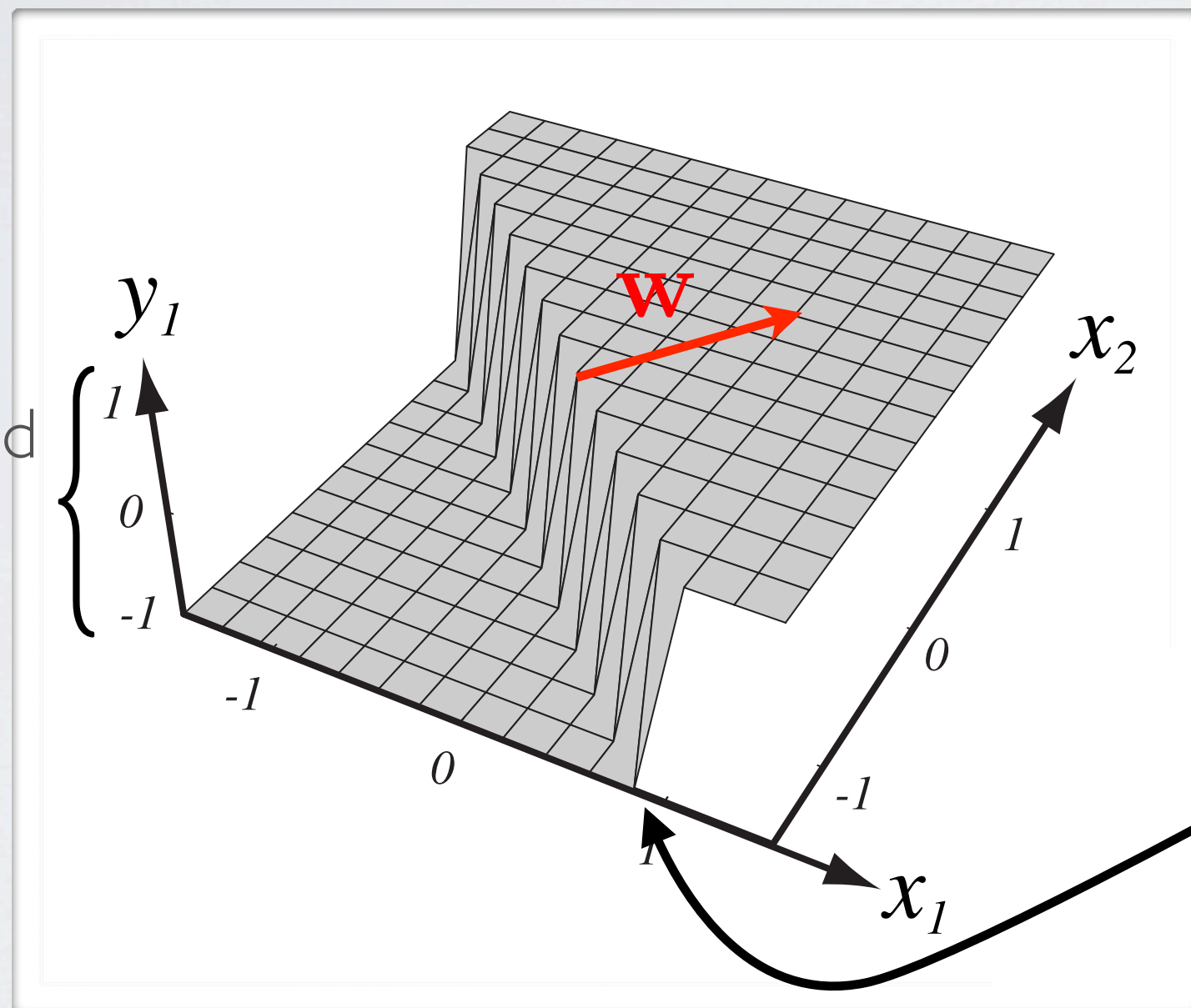
• Neuron (output) activation

$$h(\mathbf{x}) = g(a(\mathbf{x})) = g(b + \sum_i w_i x_i)$$

• $\mathbf{w}$ are the connection weights

• b is the neuron bias

• $g(\cdot)$ is called the activation function

ARTIFICIAL NEURON

Topics: connection weights, bias, activation function

range determined
by $g(\cdot)$

bias b only
changes the
position of
the riff

(from Pascal Vincent's slides)