

Linear and non-linear classifiers

Machine Learning

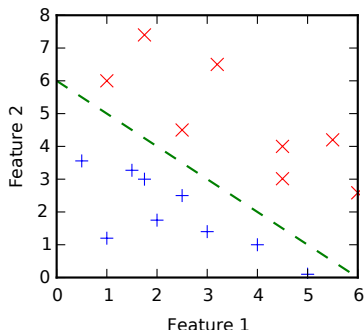
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23rd March 2017

Recollection

1. The single neuron is a linear classifier

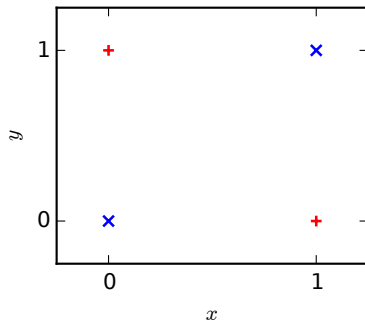


The XOR problem

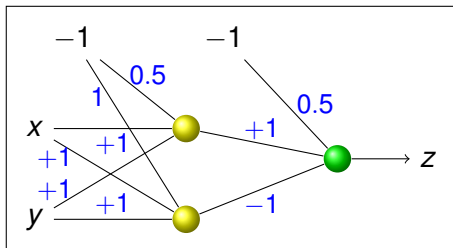
Features	Class
x, y	$x \oplus y$
0,0	0
0,1	1
1,0	1
1,1	0

The XOR problem

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A solution for XOR



1. Three neurons
2. A **hidden layer** (yellow neurons)

Summary

1. Hidden layers of neurons
 - allows for non-linear classifiers
2. Implement the neural network which solves the XOR problem
 - constant weights – no learning
 - `recall` function
3. Taster
 - We will train multi-layer networks on Monday