

WEEK 4: DEEP NNs

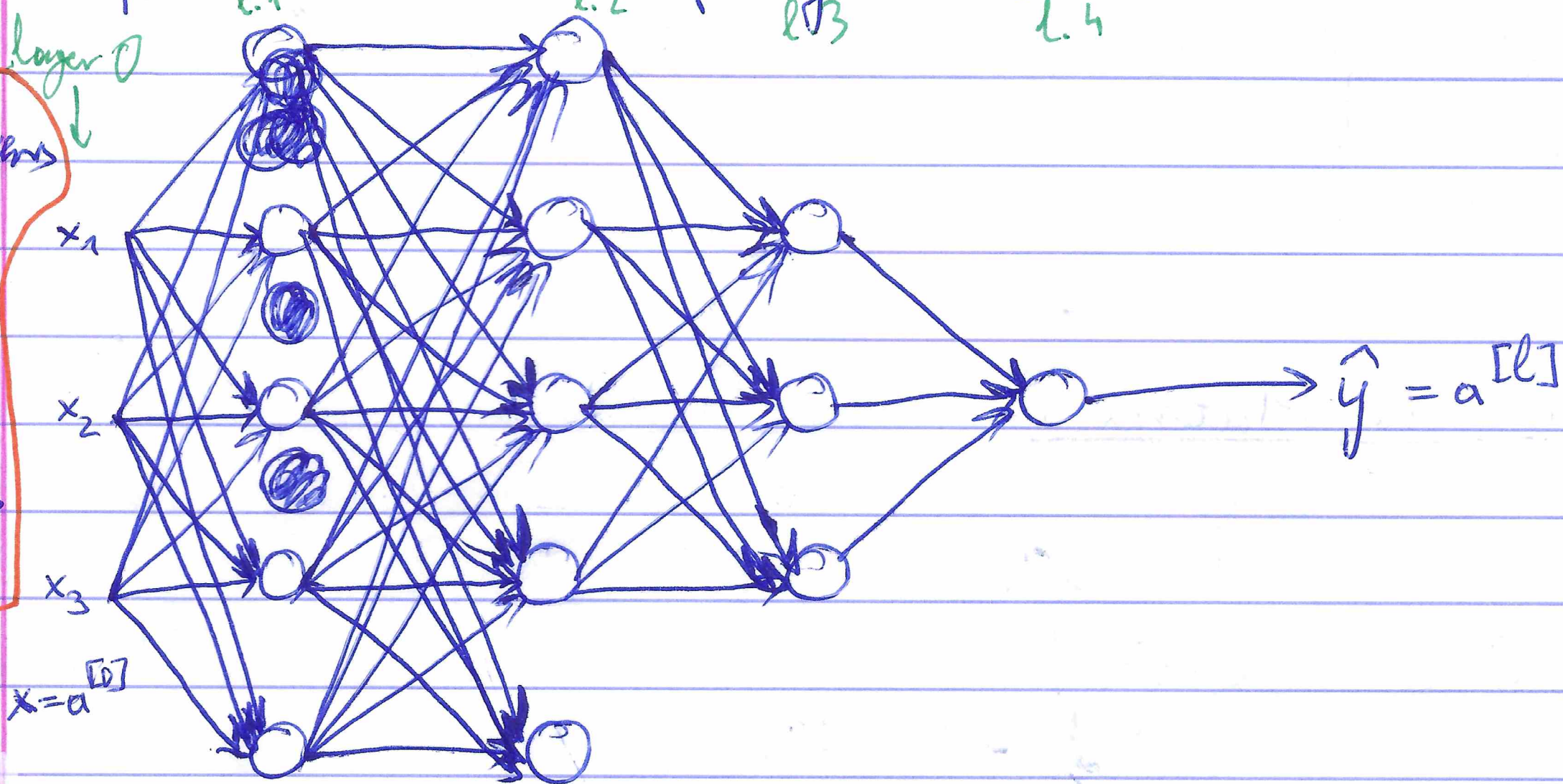
Learning objectives:

- See deep NNs as successive blocks put one after each other
- Build and train a deep L-layer NN
- Analyse matrix and vector dimensions to check NN implementation
- Understand how to use a cache to pass info from for. prop to backprop.
- Understand the role of hyperparameters in DL

Deep L-layer NN

"Deep": \geq a certain n. of layers (L) NN

$L =$ n. of layers
 $n^{[l]}$ = n. of units in layer l
 $a^{[l]}$ = activations in layer l



$L=4$

$$n^{[1]}=5, n^{[2]}=5, n^{[3]}=3, n^{[4]}=n^{[L]}=1$$
$$n^{[0]}=n_x=3$$

$$a^{[l]} = g^{[l]}(z^{[l]})$$
$$W^{[l]} = \text{weights for } z^{[l]}$$
$$b^{[l]}$$