deeplearning.ai

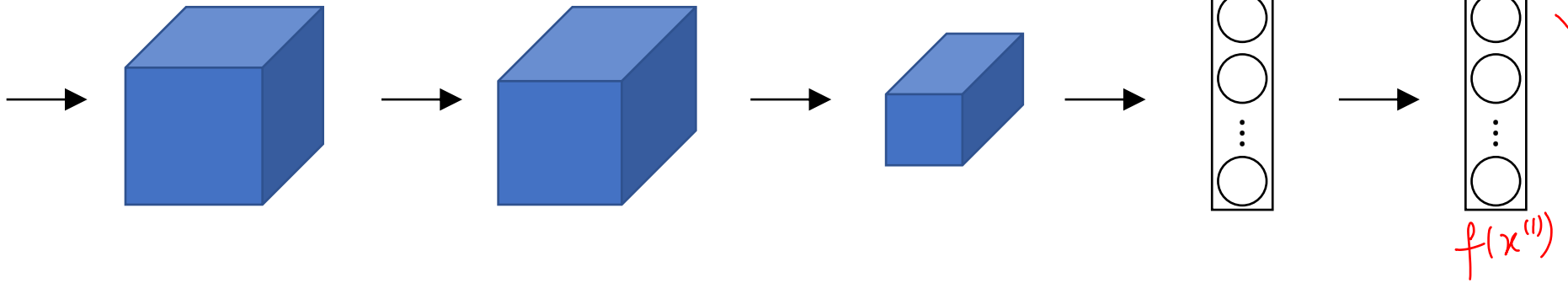
Face recognition

Siamese network

Siamese network

objective
(calculating "d")

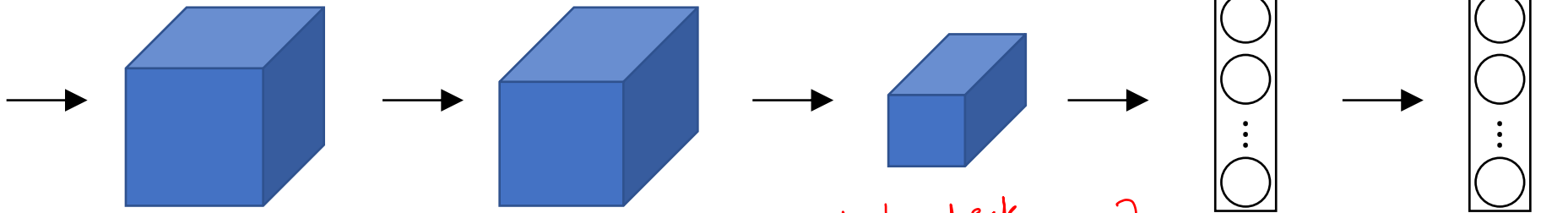
$x^{(1)}$



Lets say the O/p of the NN is $f(x^{(1)})$, which is a (128 x 1) vector representing some "encoding" of the Image $x^{(1)}$

$f(x^{(1)})$

$x^{(2)}$



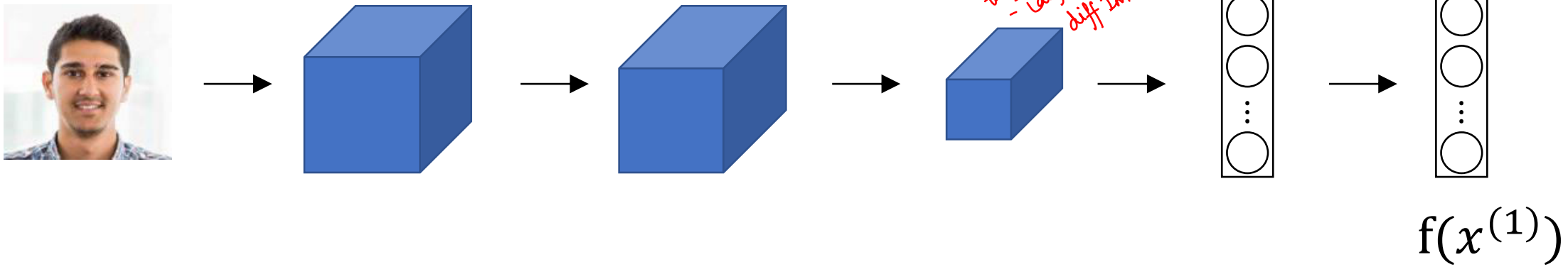
128 x 1
$f(x^{(2)})$

Basically, we want to check similarity score b/w $f(x^{(1)})$ and $f(x^{(2)})$ to decide how "similar" they are
⇒ we want to find the distance!

This is similar to the concept of word embeddings

[Taigman et. al., 2014. DeepFace closing the gap to human level performance]

Goal of learning



Parameters of NN define an encoding $f(x^{(i)})$

Learn parameters so that:

If $x^{(i)}, x^{(j)}$ are the same person, $\left\|f(x^{(i)}) - f(x^{(j)})\right\|^2$ is small.

If $x^{(i)}, x^{(j)}$ are different persons, $\left\|f(x^{(i)}) - f(x^{(j)})\right\|^2$ is large.