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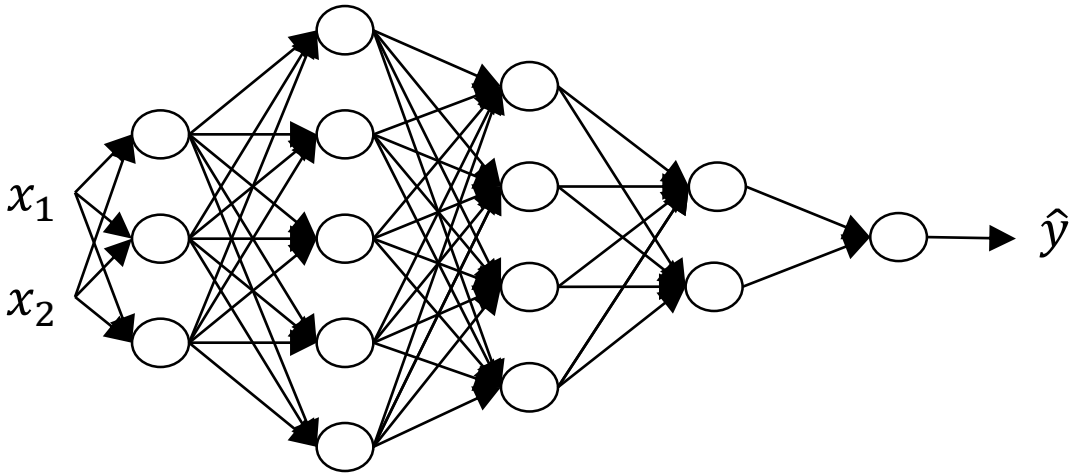
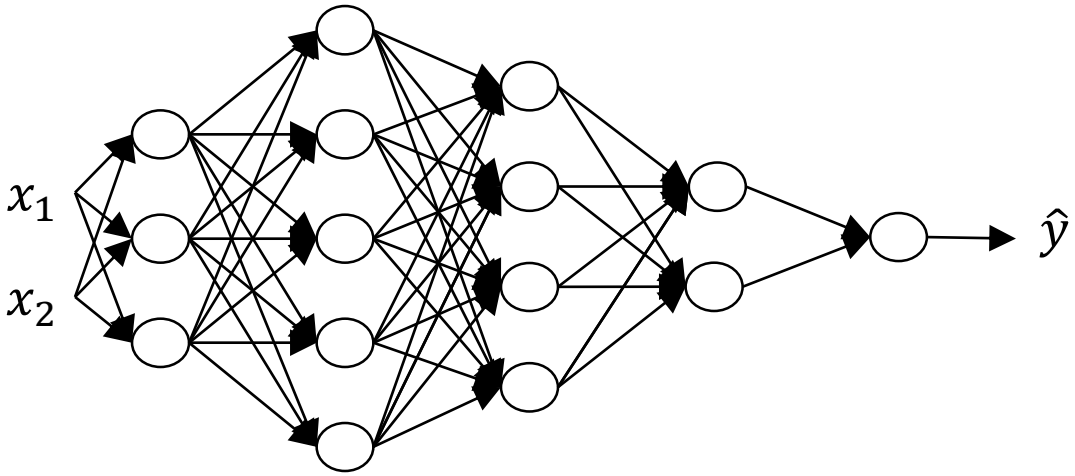
Deep Neural Networks

Getting your matrix dimensions right

Parameters $W^{[l]}$ and $b^{[l]}$



Vectorized implementation



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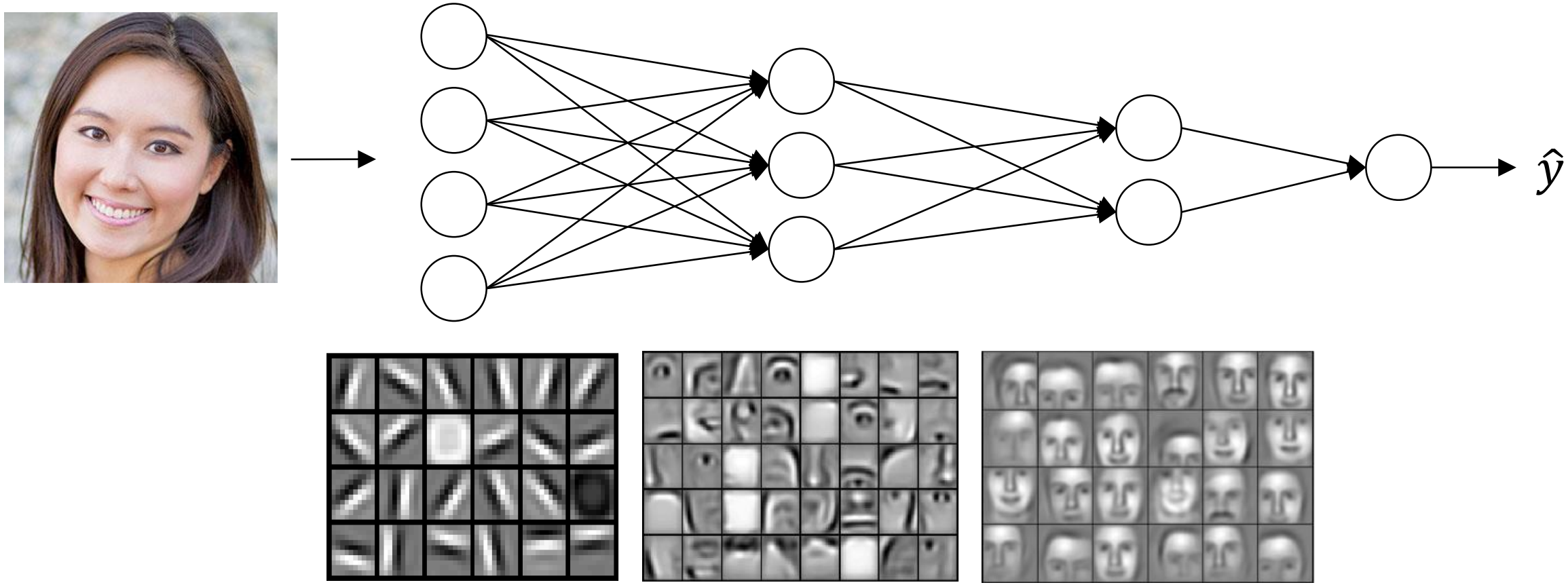
Deep Neural Networks

Why deep representations?

Intuition about deep representation



Circuit theory and deep learning

Informally: There are functions you can compute with a "small" L-layer deep neural network that shallower networks require exponentially more hidden units to compute.

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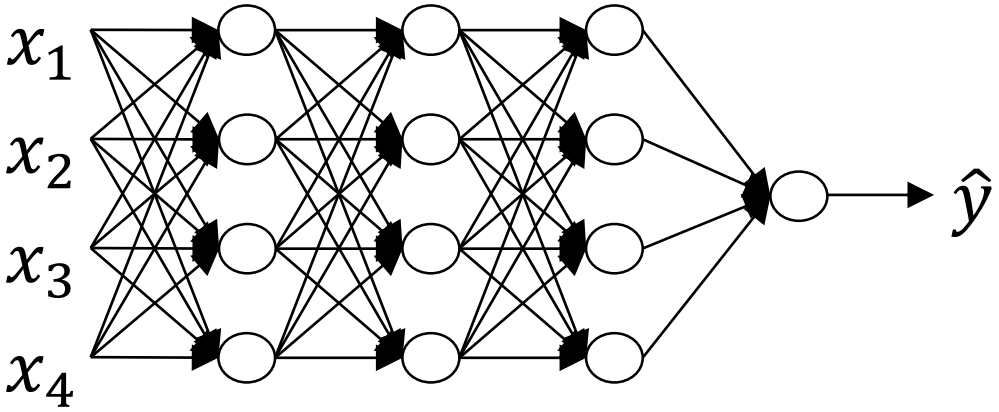
Deep Neural Networks

Building blocks of deep neural networks

Forward and backward functions



Forward and backward functions

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Deep Neural Networks

Forward and backward propagation

Forward propagation for layer l

Input $a^{[l-1]}$

Output $a^{[l]}$, cache $(z^{[l]})$

Backward propagation for layer l

Input $da^{[l]}$

Output $da^{[l-1]}, dW^{[l]}, db^{[l]}$

Summary