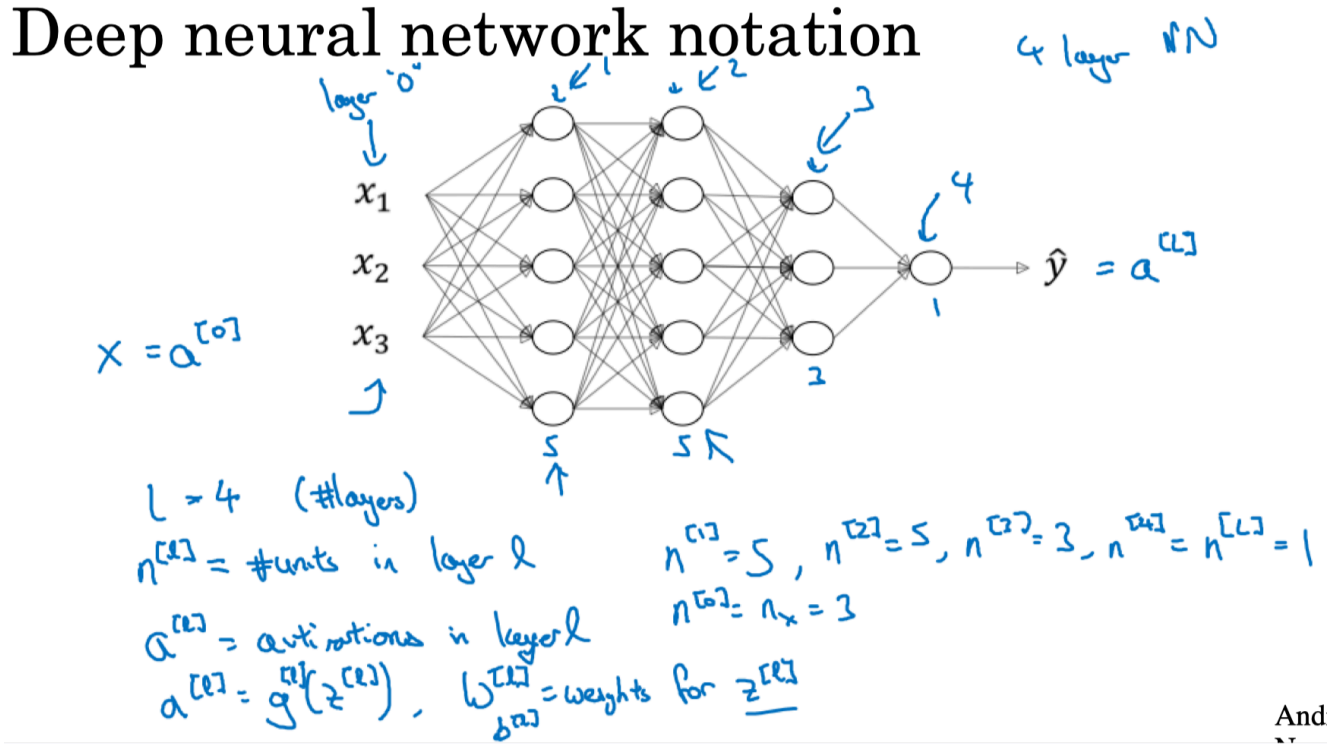
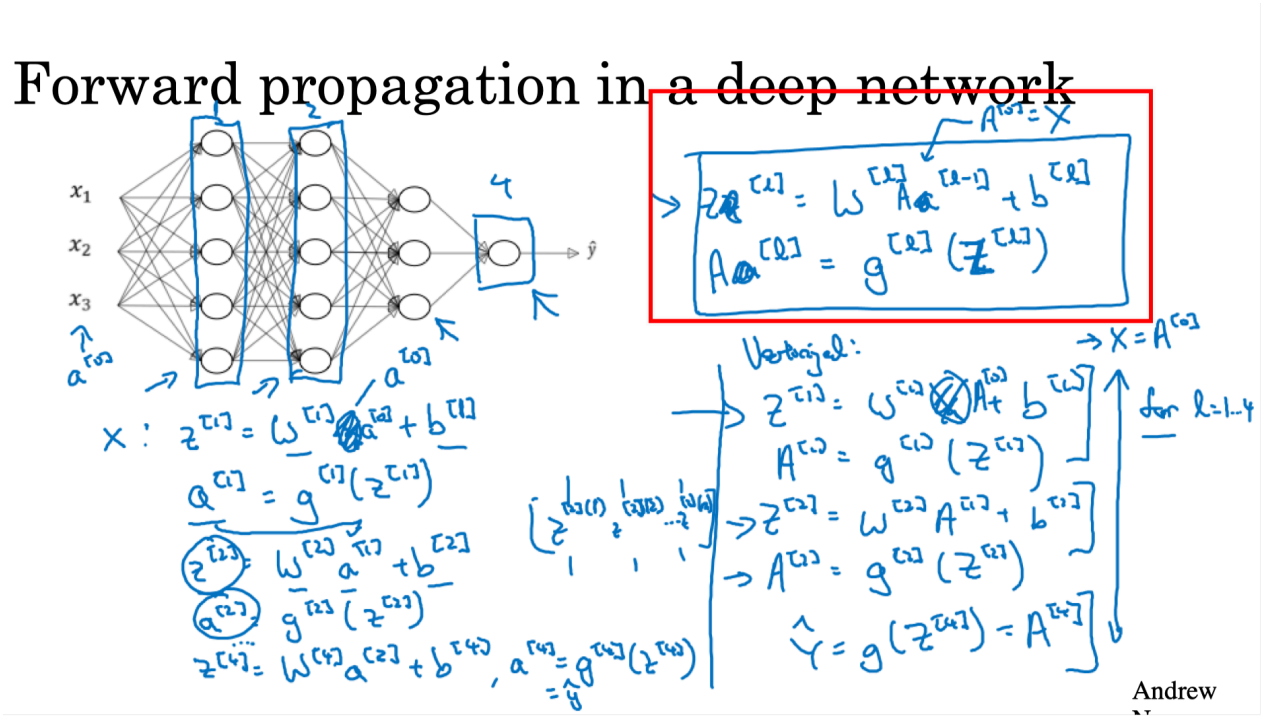
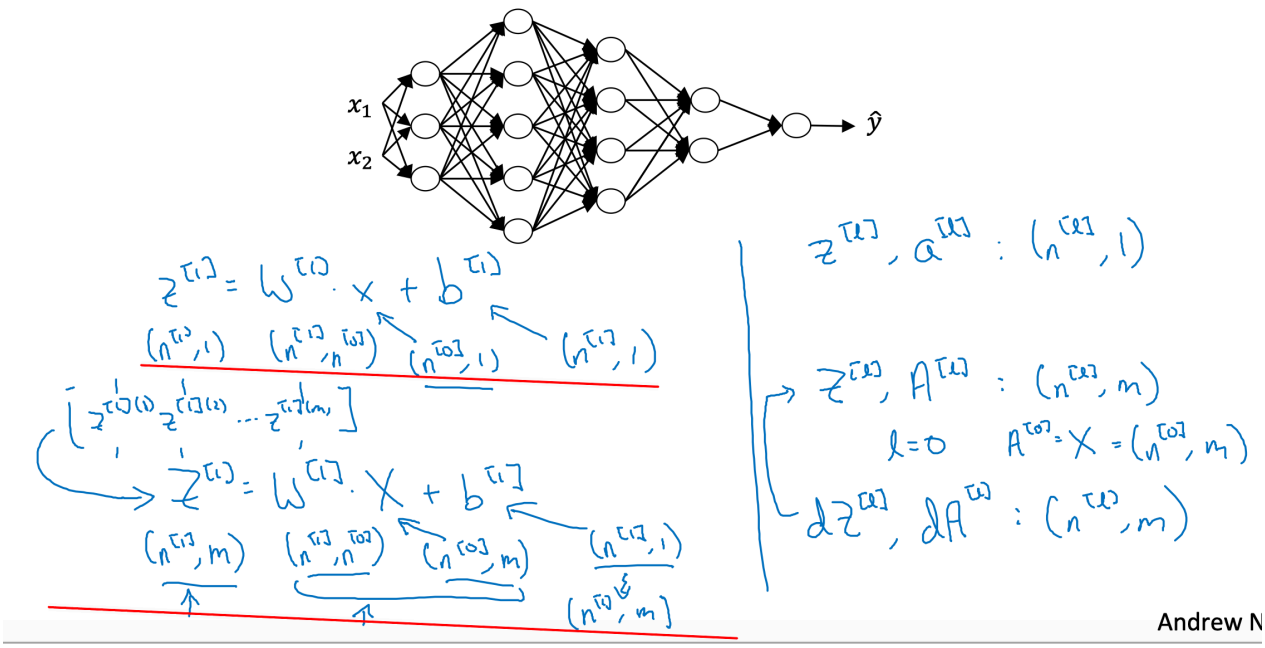
1. Deep neural network notation:



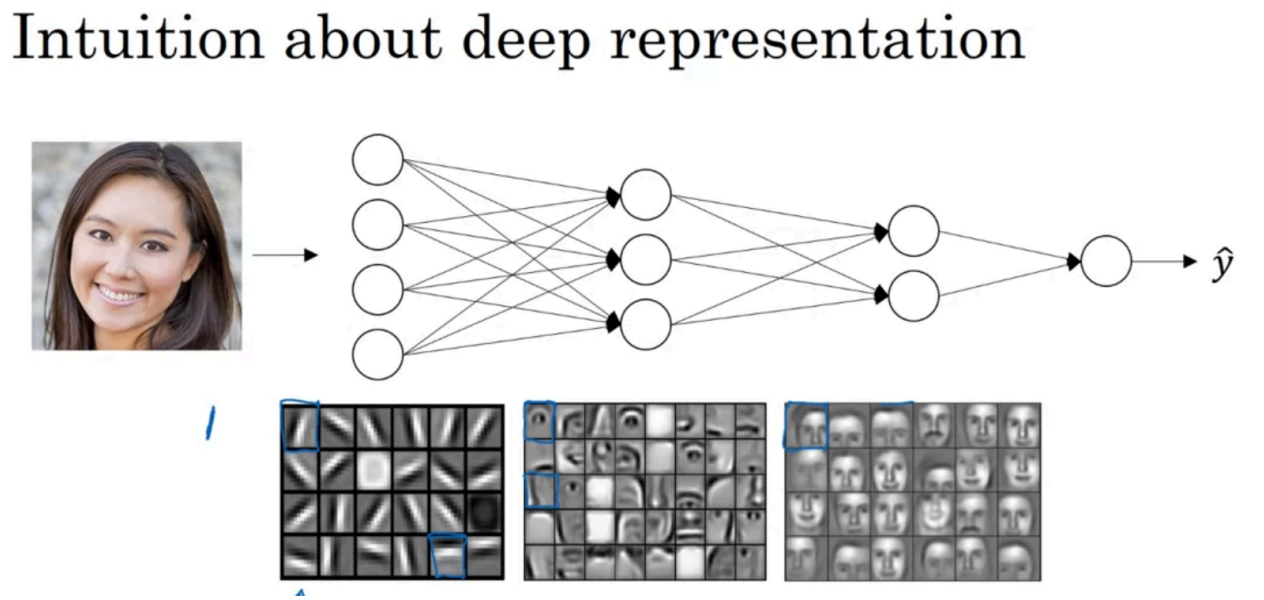

2. Forward propagation in a deep network:




3. Vectorized implement:dimension

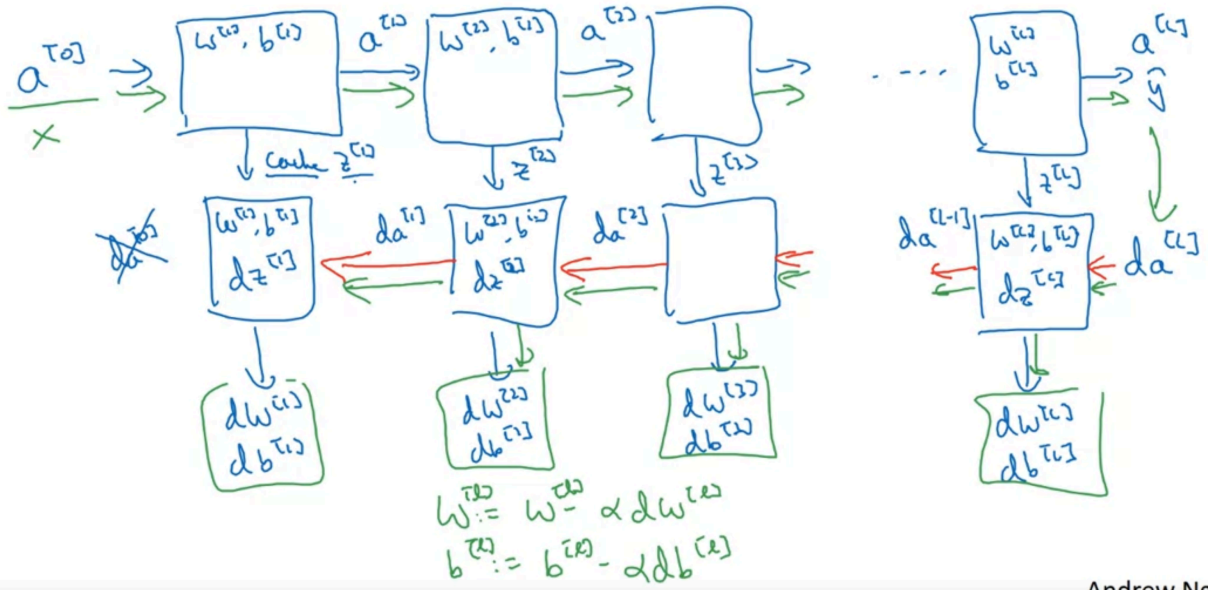



4. Why Deep Representations?

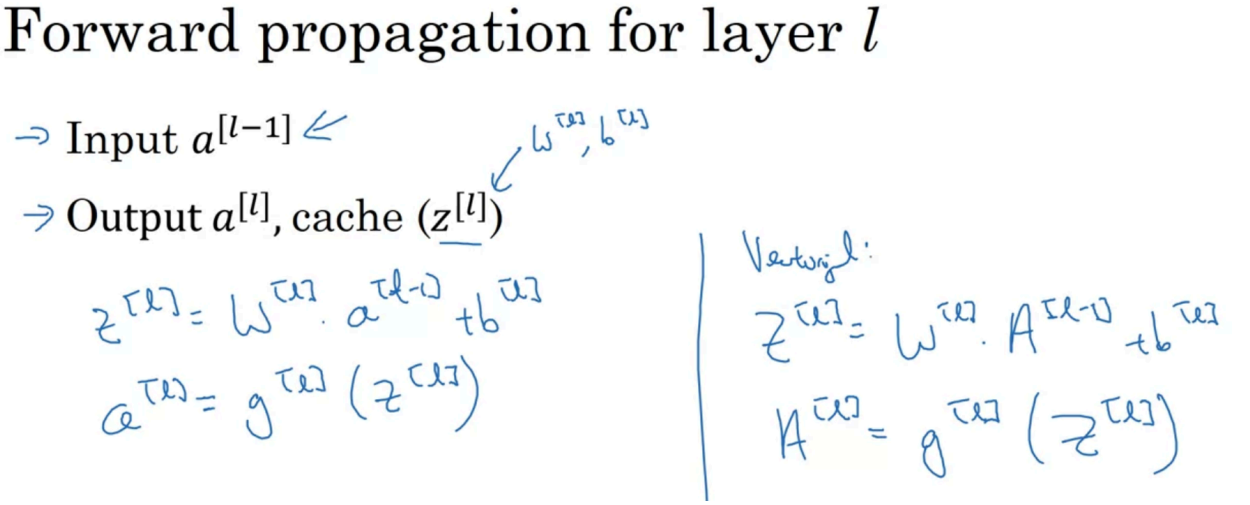



Better Feature Abstraction: 第一层提取出检测边的方向，第二层拼接这些边来检测五官，第三层拼接五官来检测整张脸

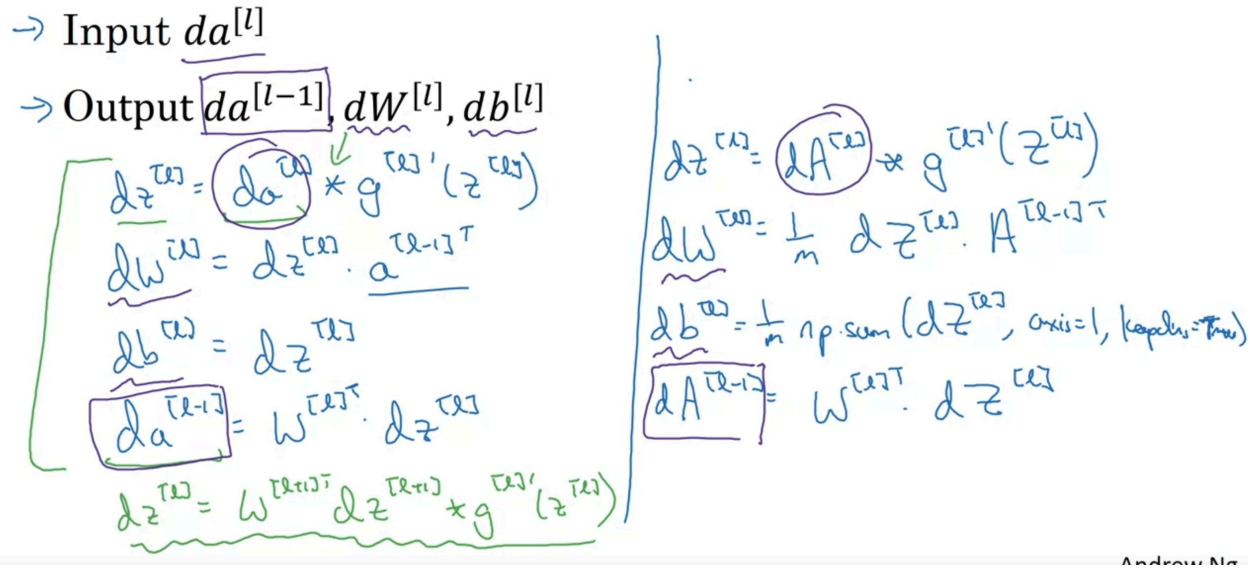
5. Forward and backward functions and block:



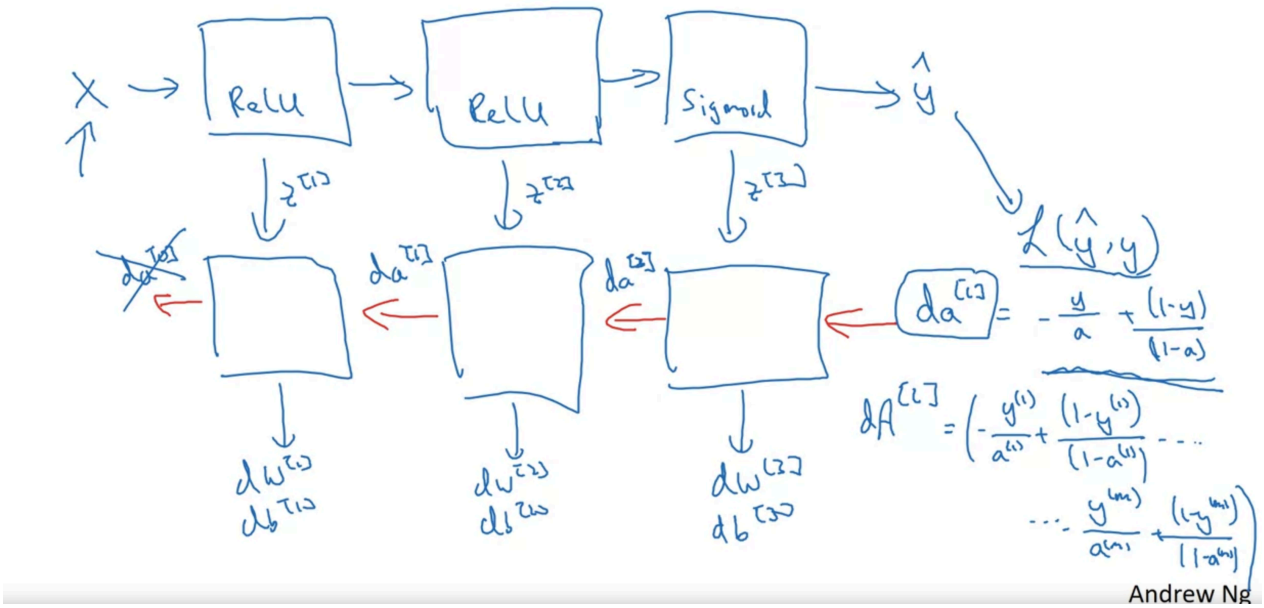

6. Forward:




7. Backward:



8. Summary:




9. Hyperparameters: parameters that control ultimate parameters of model W and B

# What are hyperparameters?

Parameters: $W^{[1]}, b^{[1]}, W^{[2]}, b^{[2]}, W^{[3]}, b^{[3]}$ ...

Hyperparameters: learning rate $\alpha$
#iterations
# hidden layers $L$
# hidden units $n^{[1]}, n^{[2]}, \ldots$
choice of activation function

Later: Momentum, mini-batch size, regularizations, ...