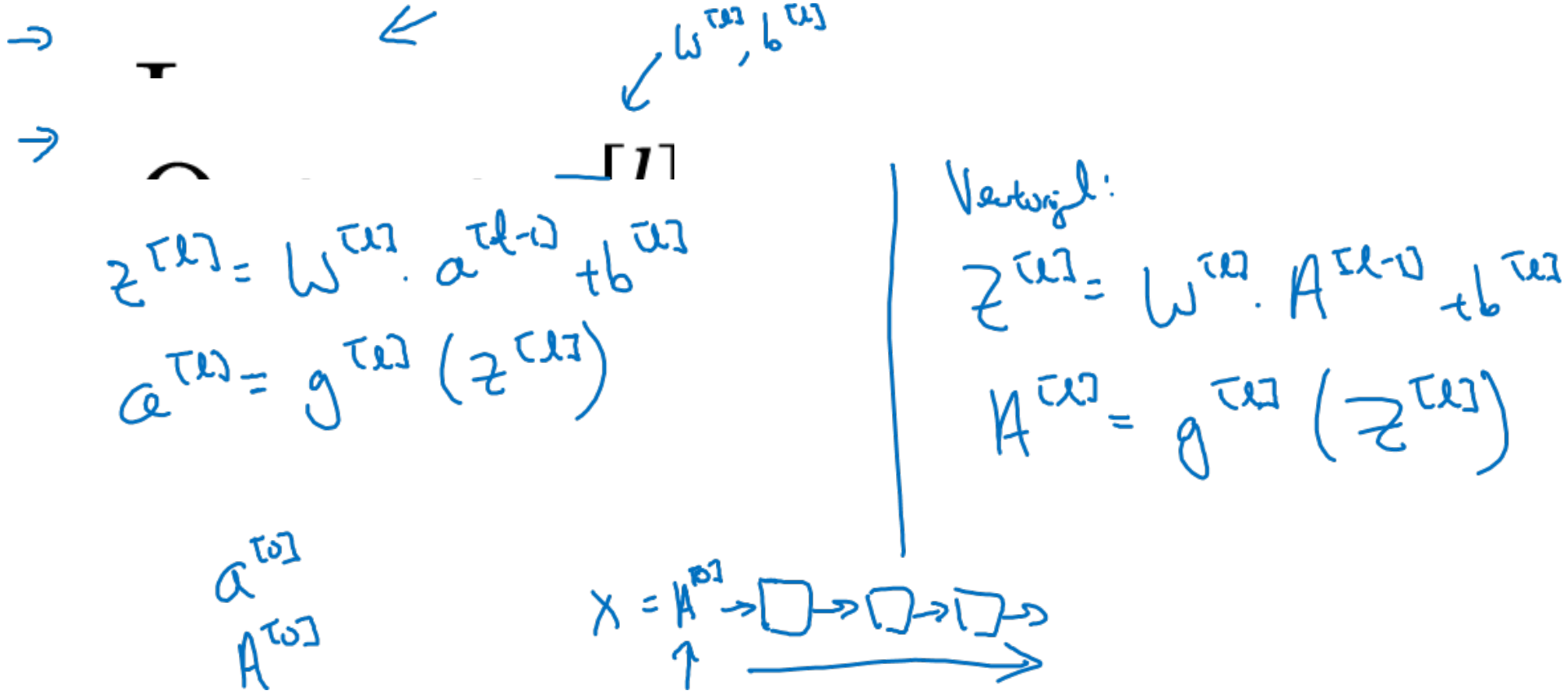
deeplearning.ai

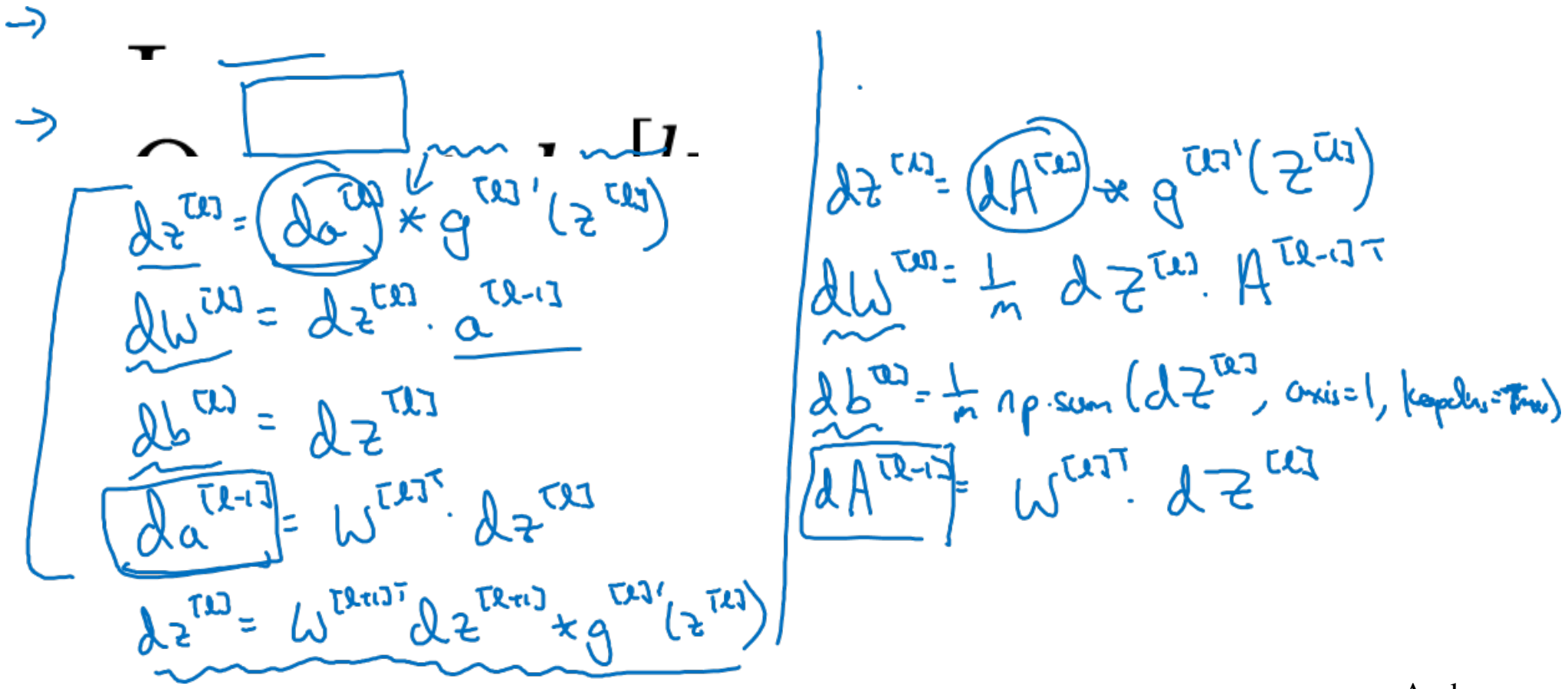
Deep Neural Networks

Forward and backward propagation

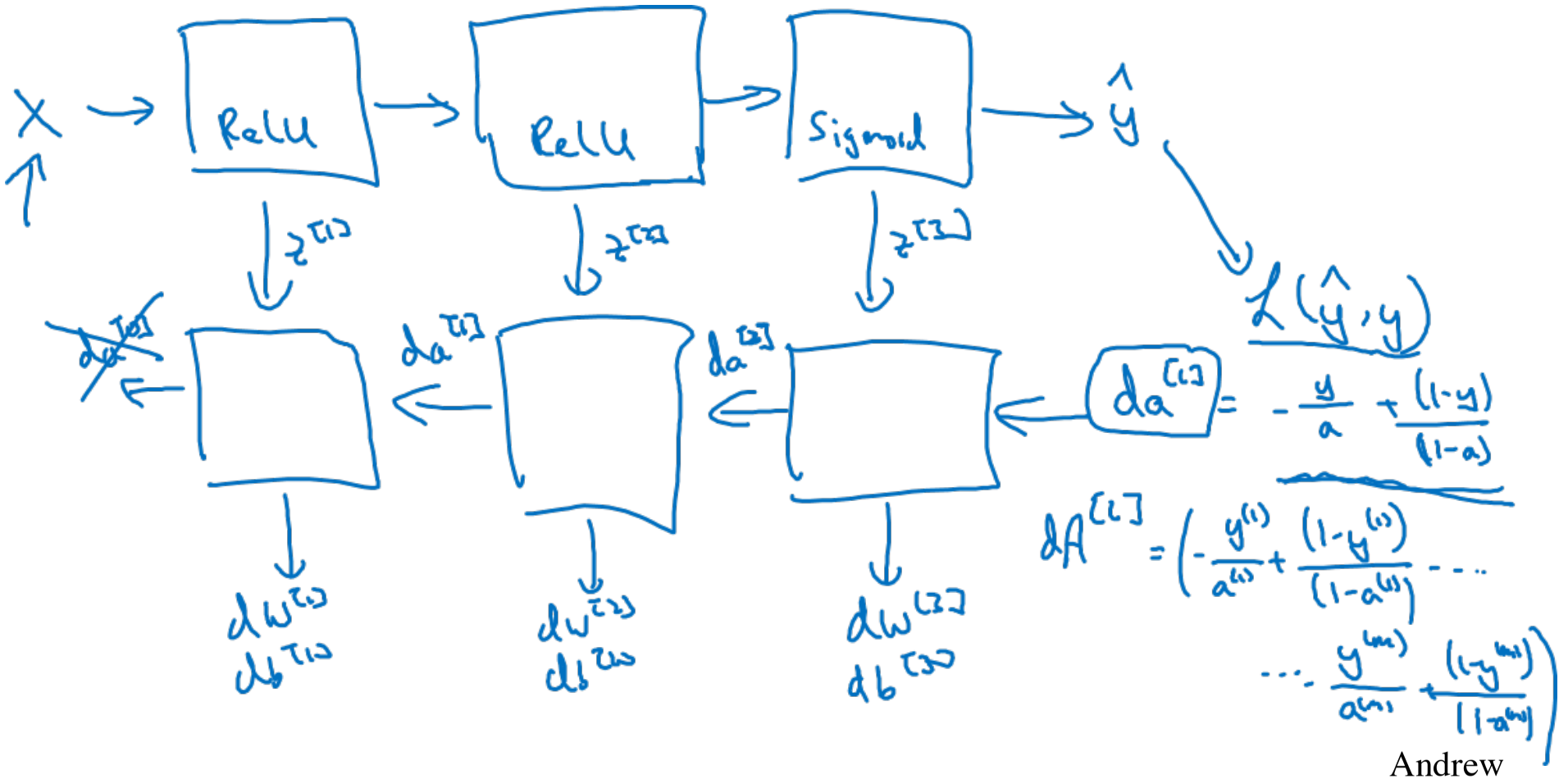
Forward propagation for layer l



Backward propagation for layer l



Summary


X
ReLU
ReLU
Sigmoid
$\hat{y}$
$z^{[1]}$
$z^{[2]}$
$z^{[3]}$
$da^{[1]}$
$da^{[2]}$
$da^{[3]}$
$\mathcal{L}(\hat{y}, y)$
$da^{[3]} = -\frac{y}{a} + \frac{(1-y)}{(1-a)}$
$dA^{[3]} = \left(-\frac{y^{(1)}}{a^{(1)}} + \frac{(1-y^{(1)})}{(1-a^{(1)})} \cdots \right.$
$\left. \cdots \frac{y^{(m)}}{a^{(m)}} + \frac{(1-y^{(m)})}{(1-a^{(m)})}\right)$
$dW^{[1]}$ $db^{[1]}$
$dW^{[2]}$ $db^{[2]}$
$dW^{[3]}$ $db^{[3]}$