

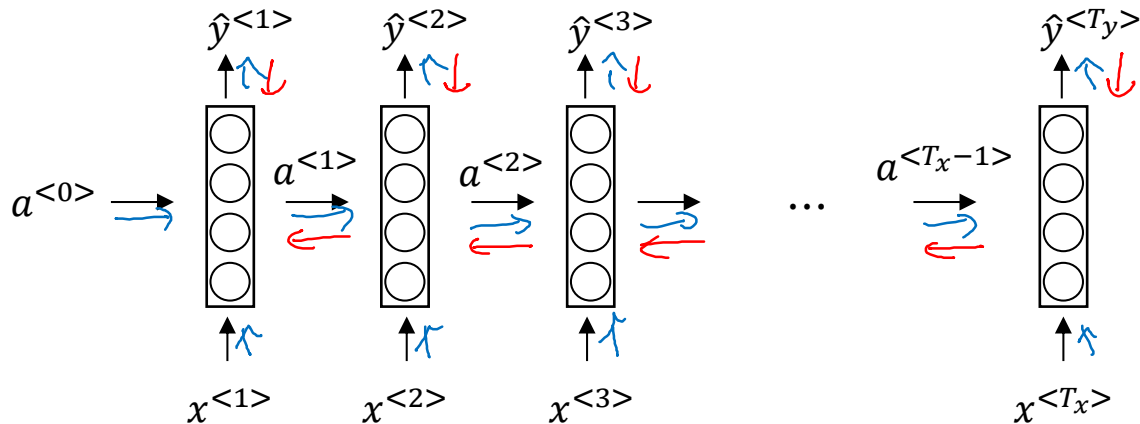


deeplearning.ai

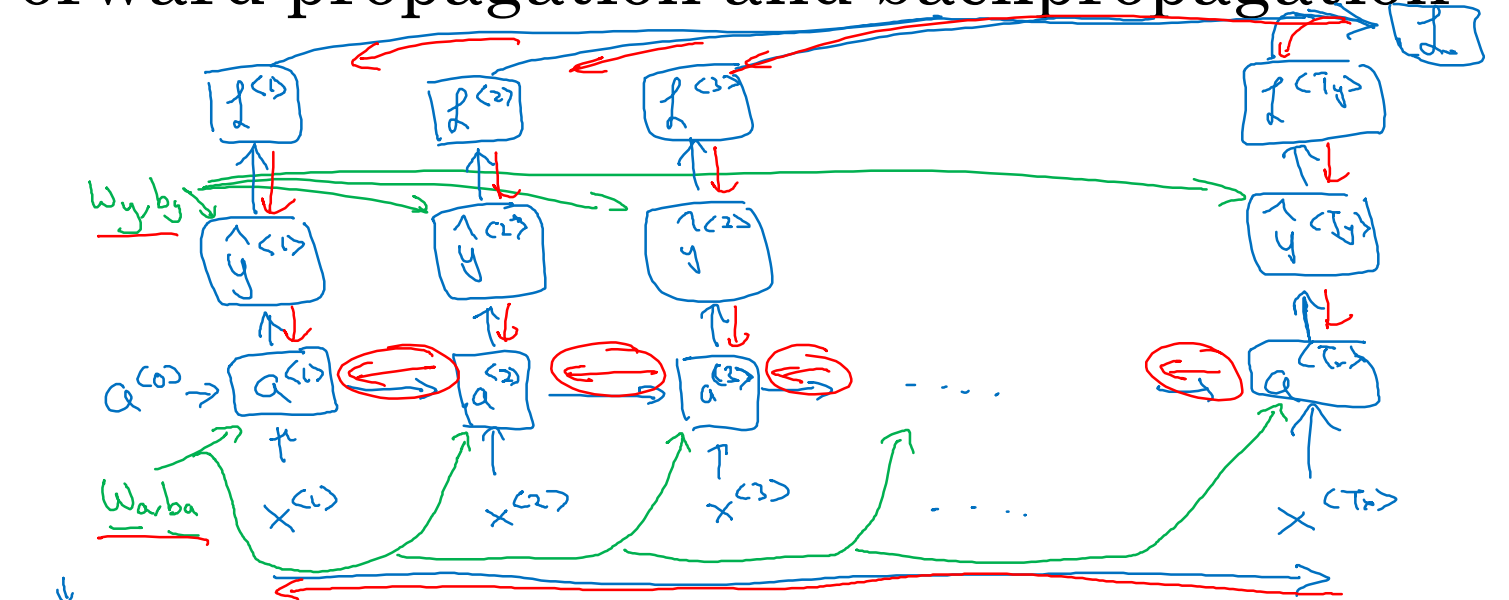
Recurrent Neural Networks

Backpropagation through time

Forward propagation and backpropagation



Forward propagation and backpropagation



$$\mathcal{L}^{<t>}(\hat{y}^{<t>}, y^{<t>}) = -y^{<t>} \log \hat{y}^{<t>} - (1 - y^{<t>}) \log (1 - \hat{y}^{<t>})$$

cross entropy loss

$$\mathcal{L}(\hat{y}, y) = \sum_{t=1}^{T_{\text{tr}}} \mathcal{L}^{<t>}(\hat{y}^{<t>}, y^{<t>})$$

Backpropagation through time