



deeplearning.ai

# Sequence to sequence models

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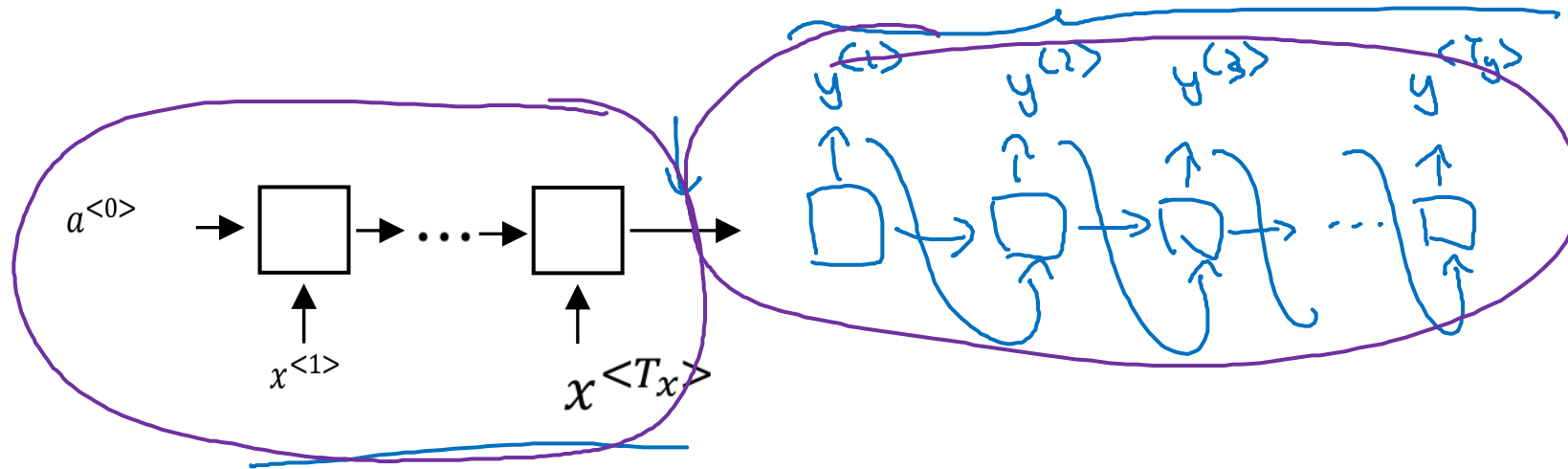
## Basic models

# Sequence to sequence model

$x^{<1>} \quad x^{<2>} \quad x^{<3>} \quad x^{<4>} \quad x^{<5>}$   
Jane visite l'Afrique en septembre

→ Jane is visiting Africa in September.

$y^{<1>} \quad y^{<2>} \quad y^{<3>} \quad y^{<4>} \quad y^{<5>} \quad y^{<6>}$

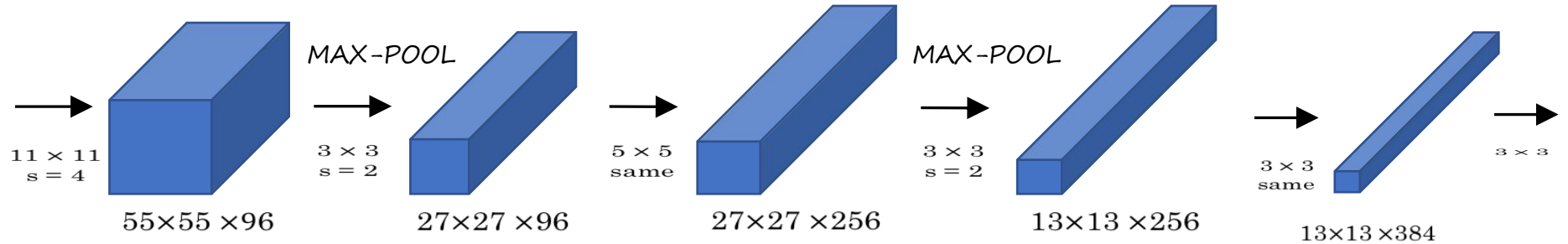
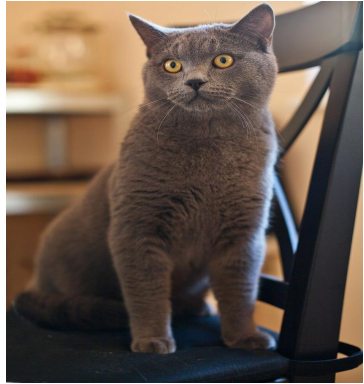


[Sutskever et al., 2014. Sequence to sequence learning with neural networks]

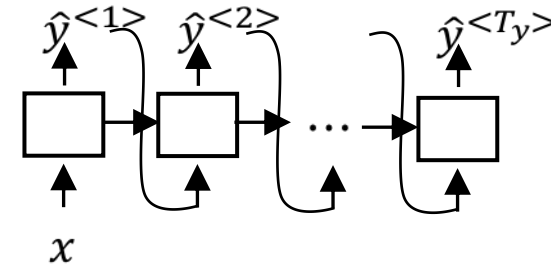
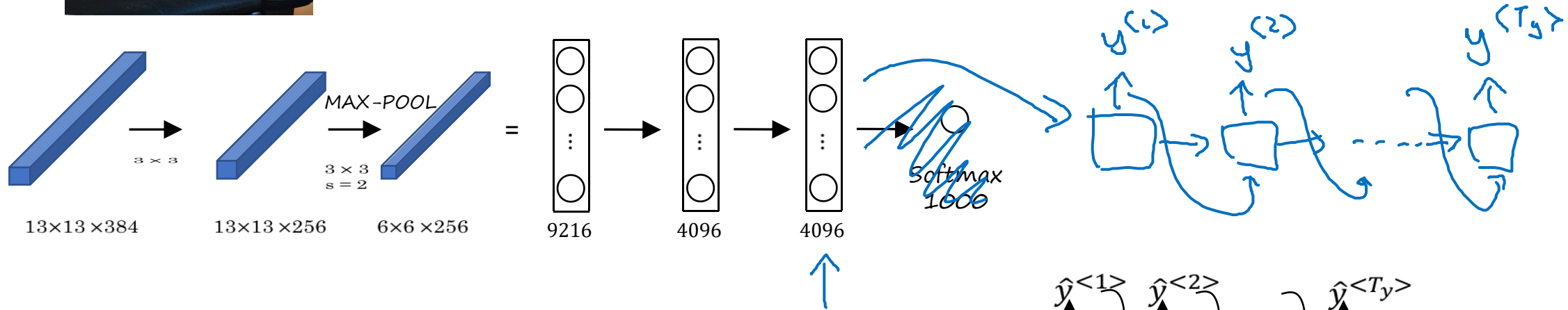
[Cho et al., 2014. Learning phrase representations using RNN encoder-decoder for statistical machine translation]

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# Image captioning



$y^{<1>} y^{<2>} y^{<3>} y^{<4>} y^{<5>} y^{<6>}$   
 A cat sitting on a chair



[Mao et. al., 2014. Deep captioning with multimodal recurrent neural networks]  
 [Vinyals et. al., 2014. Show and tell: Neural image caption generator]  
 [Karpathy and Li, 2015. Deep visual-semantic alignments for generating image descriptions]