



deeplearning.ai

# Sequence to sequence models

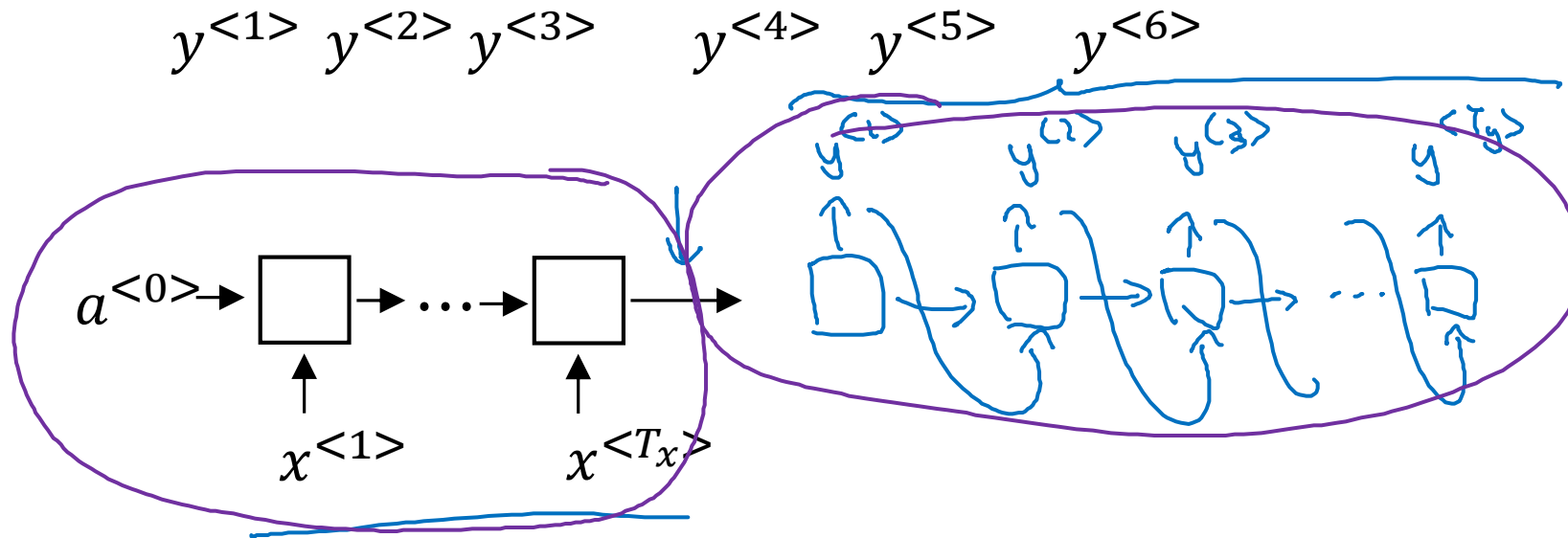
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## Basic models

# Sequence to sequence model

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

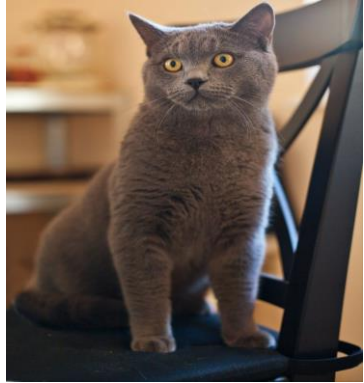
→ Jane is visiting Africa in September.



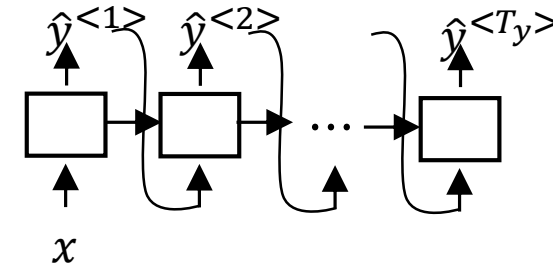
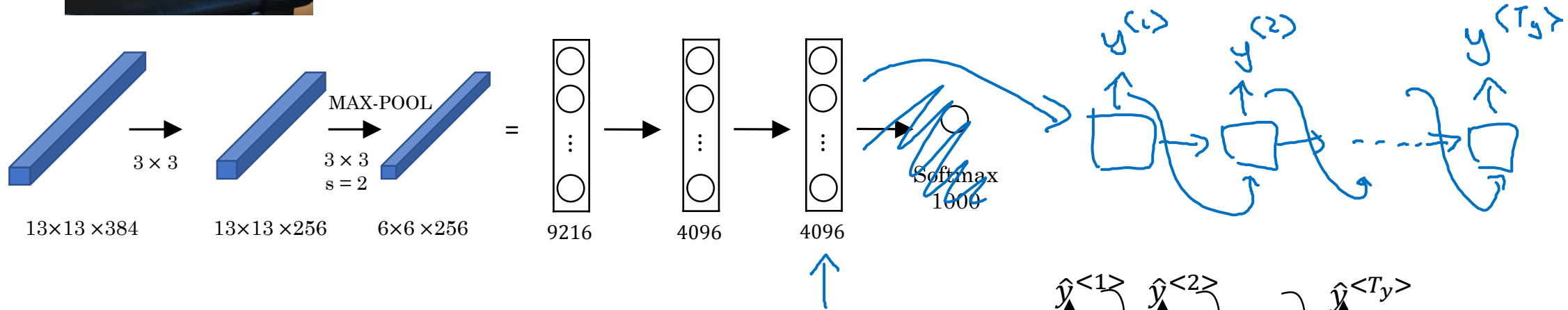
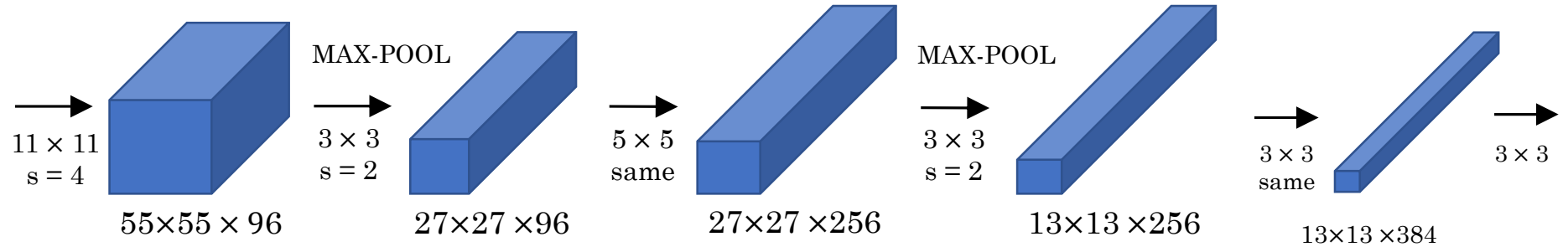
[Sutskever et al., 2014. Sequence to sequence learning with neural networks] ↩

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

# 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]