



deeplearning.ai

# Sequence to sequence models

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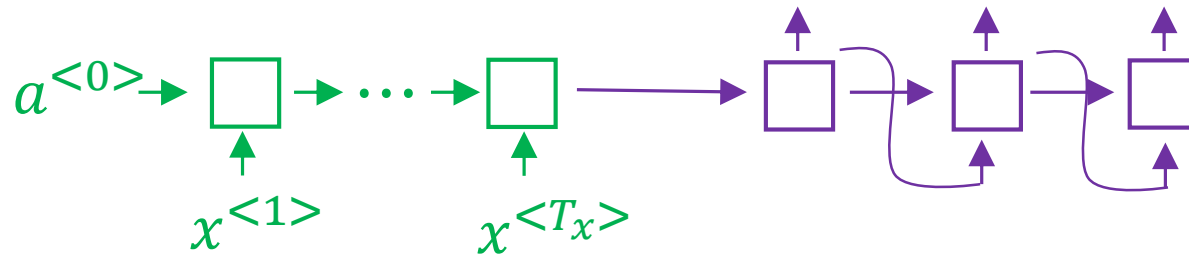
## Error analysis on beam search

# Example

Jane visite l'Afrique en septembre.

Human: Jane visits Africa in September.

Algorithm: Jane visited Africa last September.



# Error analysis on beam search

Human: Jane visits Africa in September. ( $y^*$ )

Algorithm: Jane visited Africa last September. ( $\hat{y}$ )

Case 1:

Beam search chose  $\hat{y}$ . But  $y^*$  attains higher  $P(y|x)$ .

Conclusion: Beam search is at fault.

Case 2:

$y^*$  is a better translation than  $\hat{y}$ . But RNN predicted  $P(y^*|x) < P(\hat{y}|x)$ .

Conclusion: RNN model is at fault.

# Error analysis process

Human	Algorithm	$P(y^* x)$	$P(\hat{y} x)$	At fault?
Jane visits Africa in September.	Jane visited Africa last September.			

Figures out what fraction of errors are “due to” beam search vs. RNN model