



deeplearning.ai

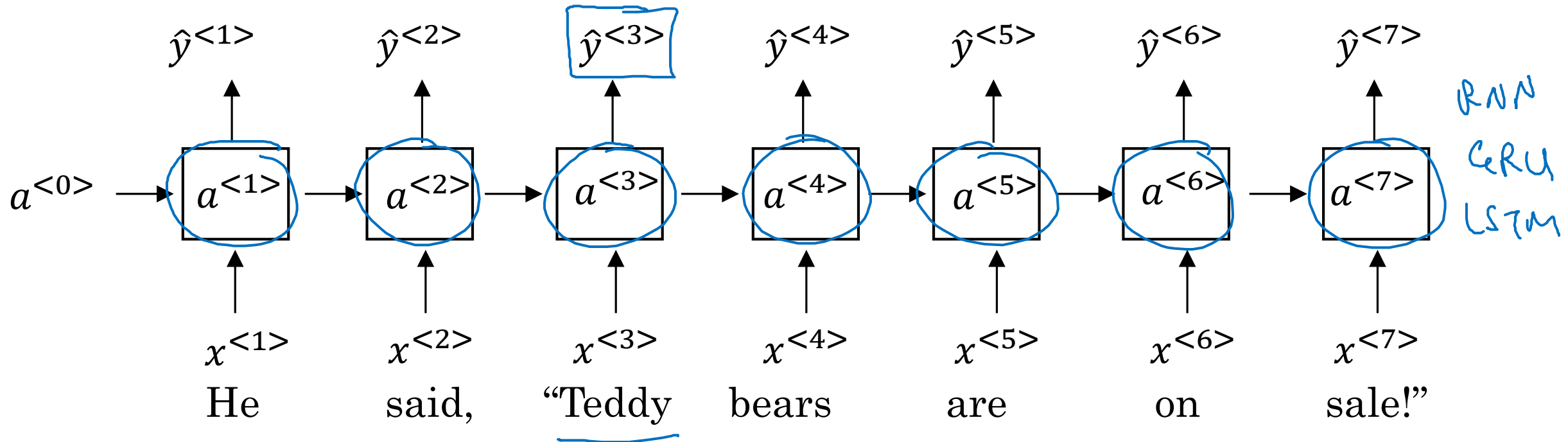
Recurrent Neural Networks

Bidirectional RNN

Getting information from the future

He said, “Teddy bears are on sale!”

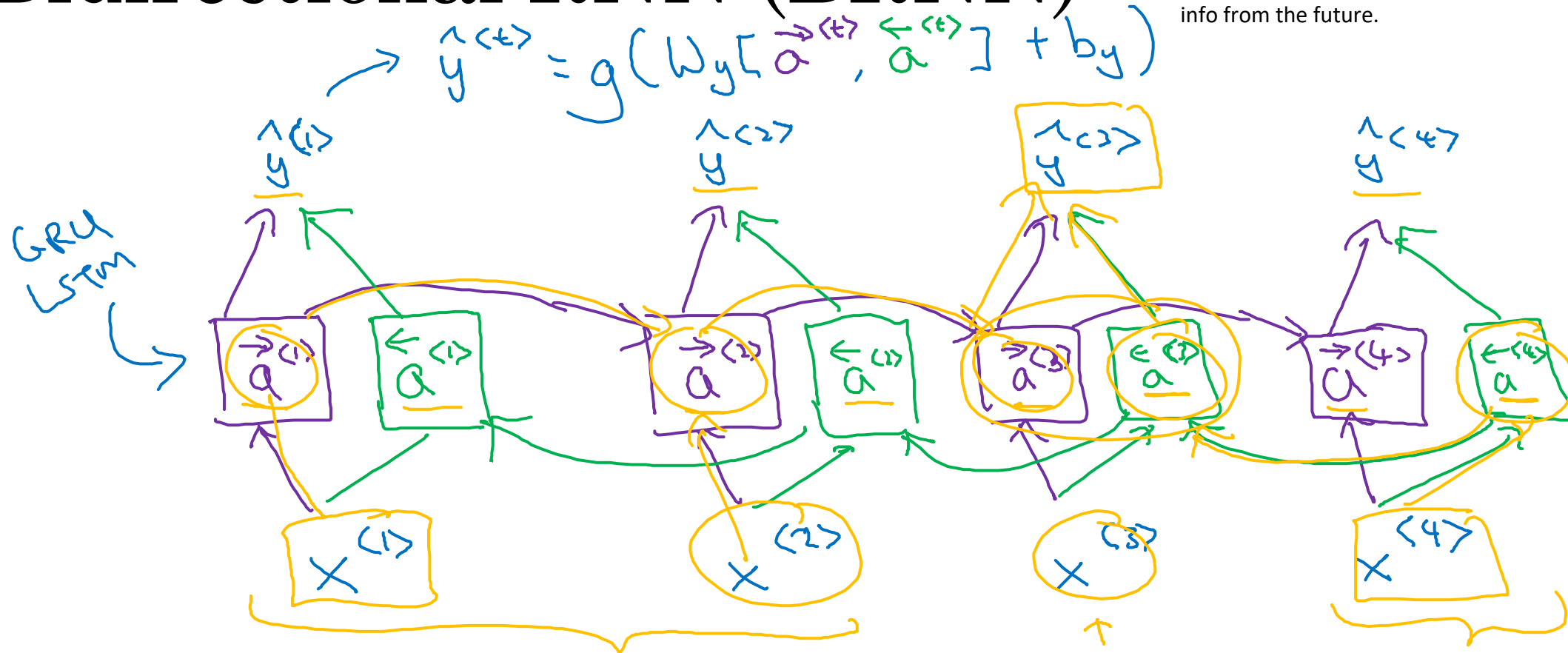
He said, “Teddy Roosevelt was a great President!”



This is a unidirectional or forward directional only RNN.

Bidirectional RNN (BRNN)

So this allows the prediction at time three to take as input both info from the past, as well as the info from present, which goes into both the forward and backward things at this step, as well as info from the future.



Acyclic graph

He said "Teddy Roosevelt ..."

BRNN w/ LSTM

This is a modification they can make to the basic RNN architecture or the GRU or the LSTM and by making this change, you can have a model uses RNN and or GRU or LSTM and able to make predictions anywhere even the middle of the sentence by taking into account info potentially from the entire sequence.

Disadvantage is that you do need the entire sequence of data before you can prediction anywhere

So if we have a NLP problem, and you have the complete sentence, you try to label things in the sentence, a bidirectional RNN with LSTM blocks both forward and backward would be a pretty reasonable first thing to try.

Andrew Ng