





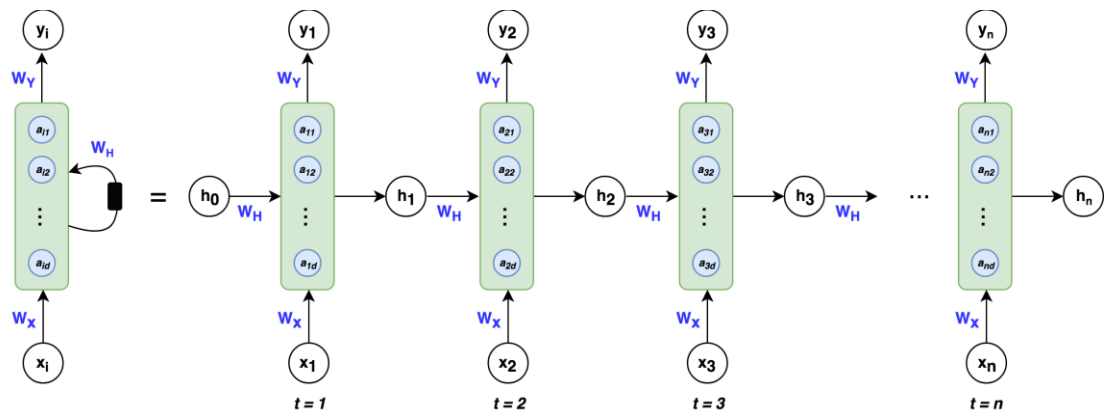
Sequence Model (week 1)

Examples of sequence data

Speech recognition		→	"The quick brown fox jumped over the lazy dog."
Music generation		→	
Sentiment classification	"There is nothing to like in this movie."	→	★☆☆☆☆
DNA sequence analysis	AGCCCCTGTGAGGAACTAG	→	AGCCCCTGTGAGGAACTAG
Machine translation	Voulez-vous chanter avec moi?	→	Do you want to sing with me?
Video activity recognition		→	Running
Name entity recognition	Yesterday, Harry Potter met Hermione Granger.	→	Yesterday, Harry Potter met Hermione Granger . Andrew Ng

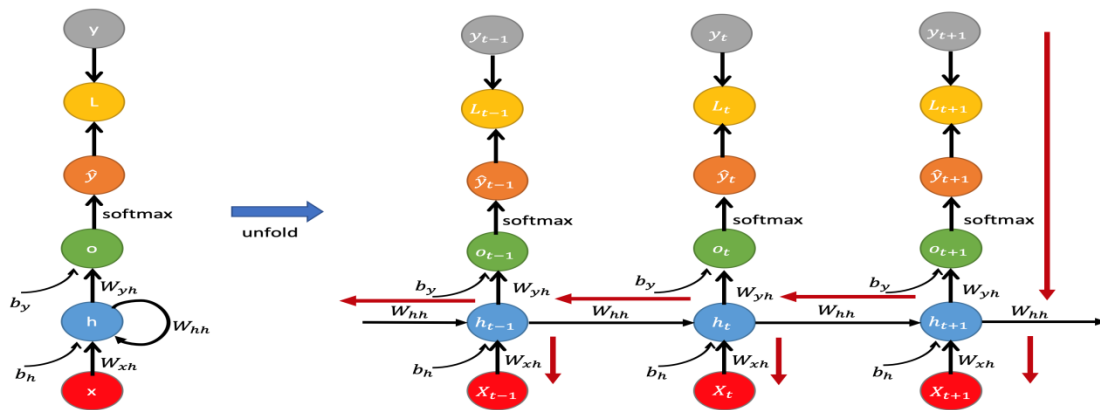
We use recurrent neural network not standard one as

- Inputs „outputs can be different length in different examples
- Doesn't share features learned across different positions of text

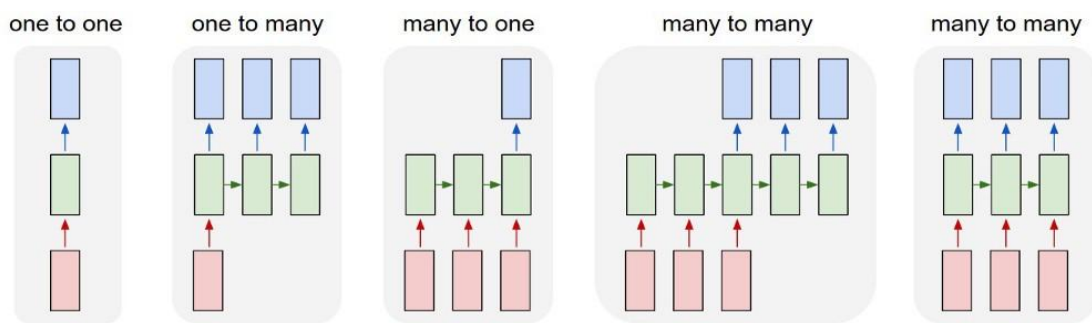


One weakness of this RNN is that it only uses the information that is earlier in the sequence to make a prediction

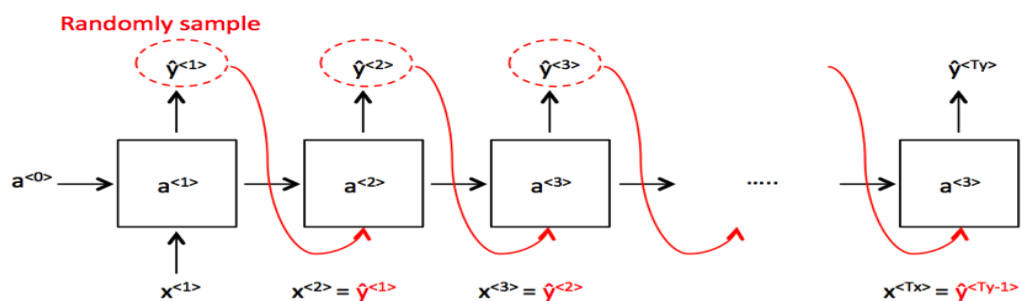
So we make a quick modification to use both information earlier in the sequence as well as information later in the sequence



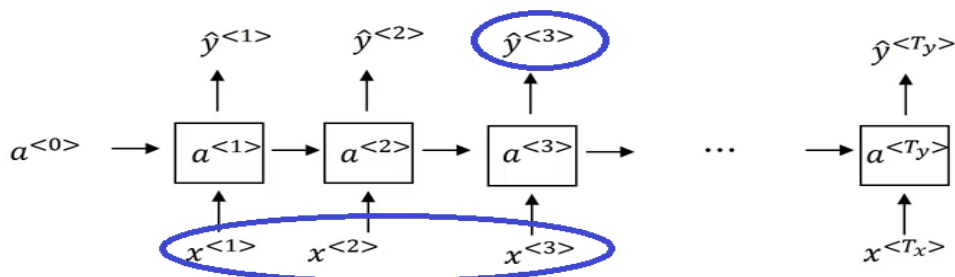
There are different types of RNNs as the input and outputs may be the same length and may be different in the length



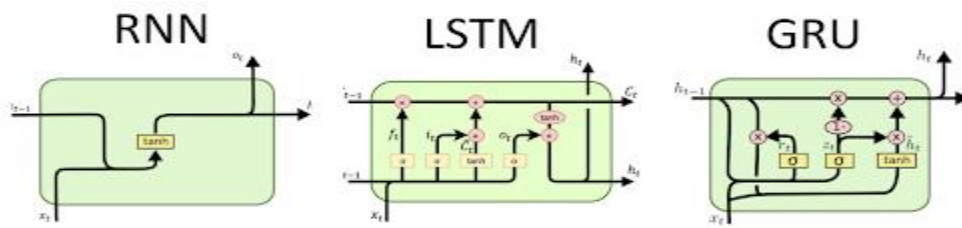
Sampling sequence from RNN



But there is a vanishing gradient with RNNs

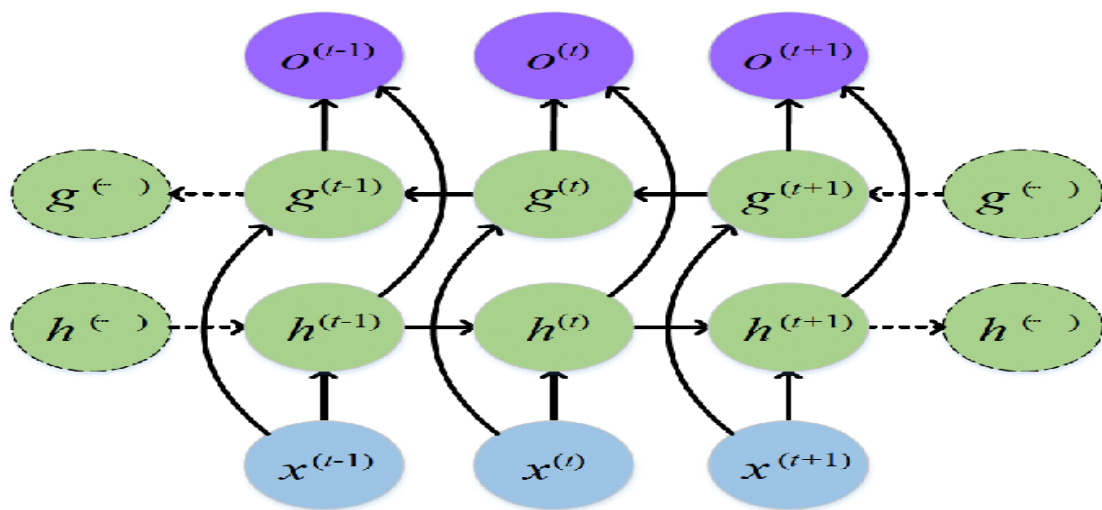


So we use GRU and LSTM



There are just two more ideas that let you build much more ideas that let you build much more powerful models

- Bidirectional RNN



- Deep RNN

