



LSTM Variations



LSTM Variations

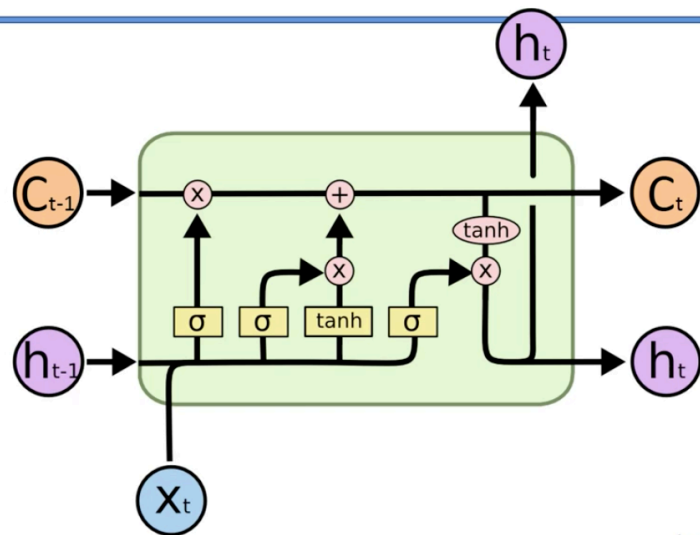


Image Source: colah.github.io

Standard LSTM

LSTM Variations

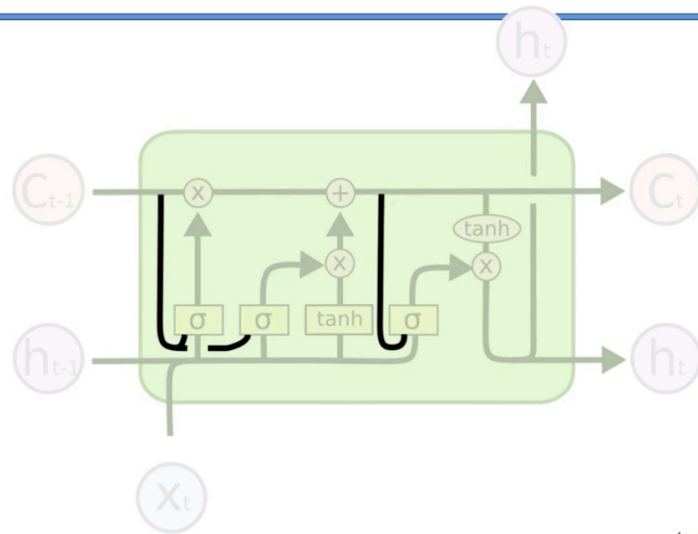


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In here, additional input provided for the sigmoid function (it's called peephole). It's information about the current state of the memory cell which takes account for decision making.

LSTM Variations

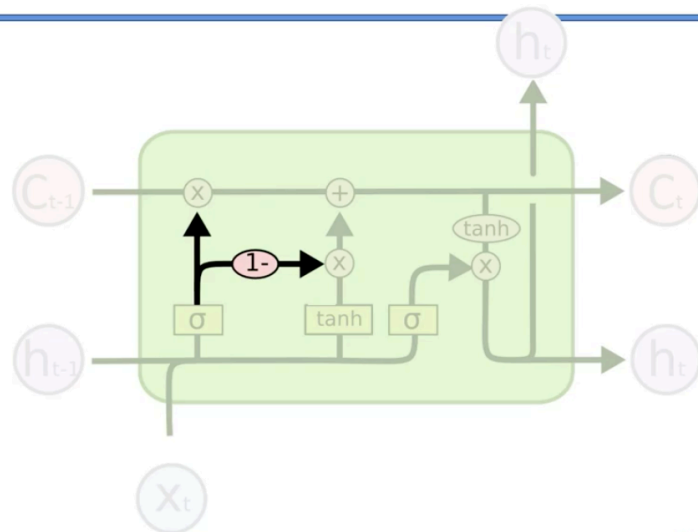


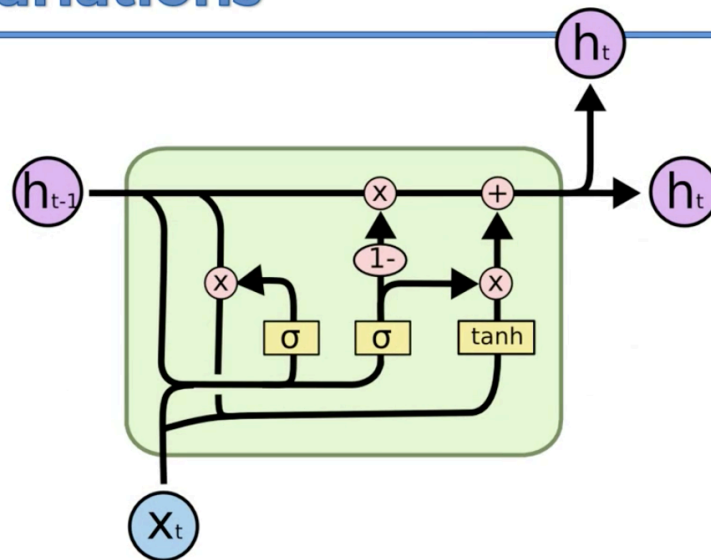
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In here, this means that when we close the memory off (when it's 0) then the number is $1-0=1$ and when we open the memory the number becomes 0.

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This is a very popular modification called Gated Recurrent Unit or GRUs in short. In here we get rid of C and we replaced it with h with is the hidden pipeline.

Long Short-Term Memory

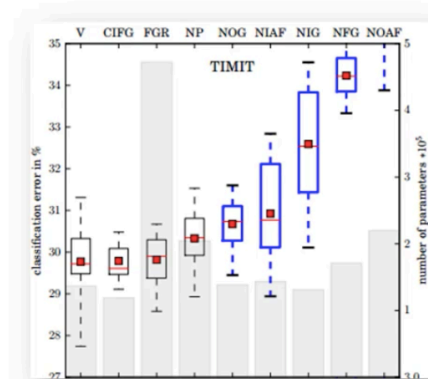
Additional Reading:

LSTM: A Search Space Odyssey

By Klaus Greff et al. (2015)

Link:

<https://arxiv.org/pdf/1503.04069.pdf>



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