

An introduction to Recurrent Neural Networks

Felipe Salvatore

<https://felipessalvatore.github.io/>

Thiago Bueno

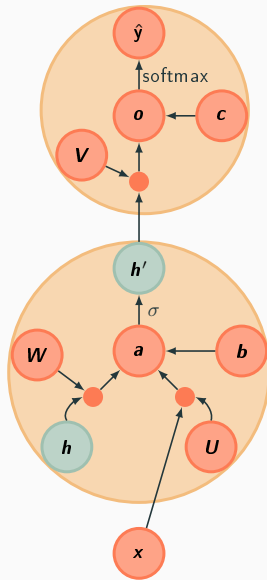
<http://thiagopbueno.github.io/>

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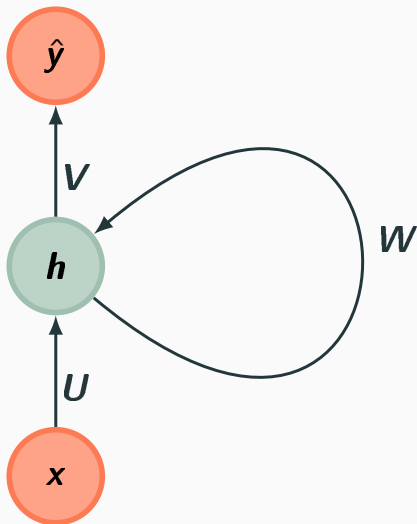
IME-USP: Institute of Mathematics and Statistics, University of São Paulo

RNN

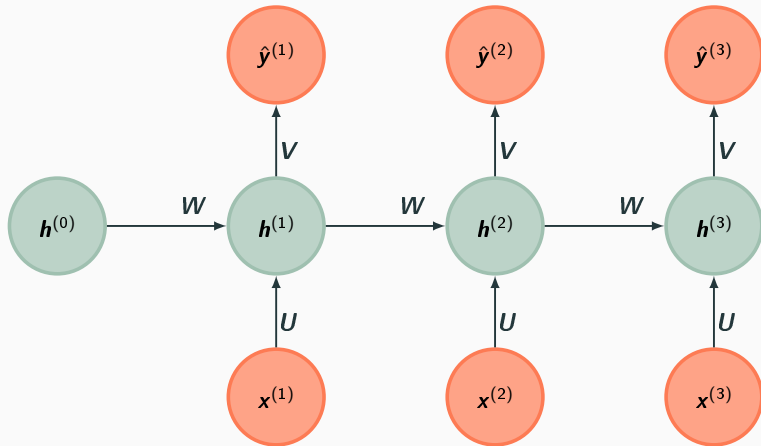
RNN as a graph



RNN as a graph

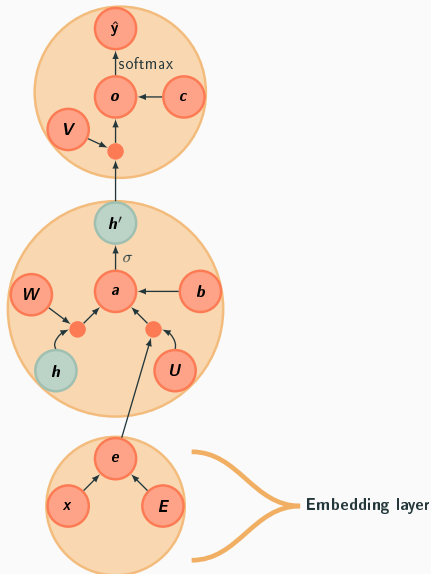


Unfolding the graph

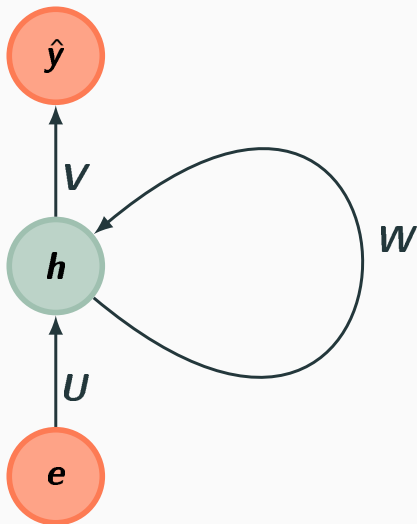


Language model

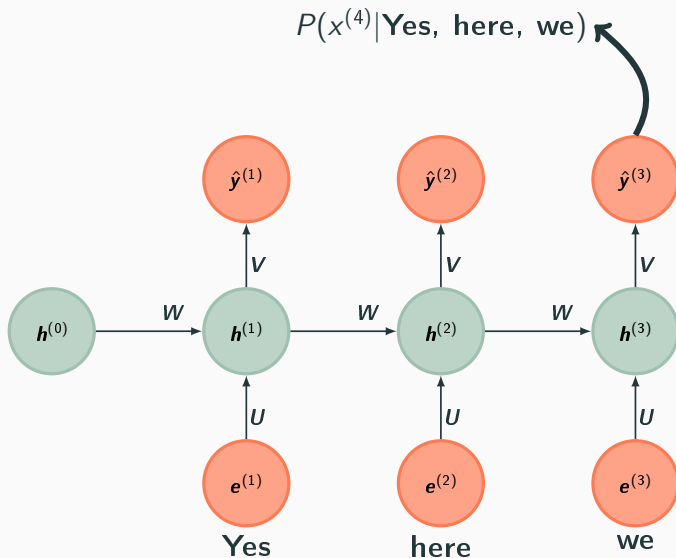
The language model: graph



The language model: graph

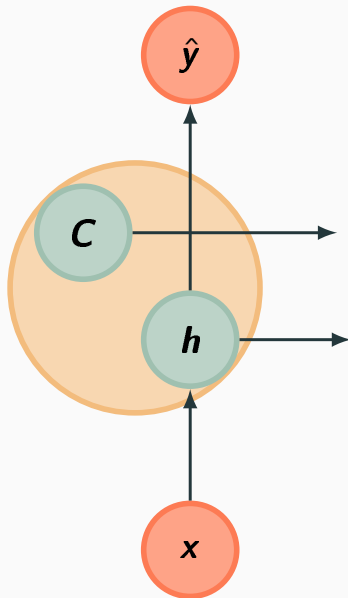


The Language model: unfolding example

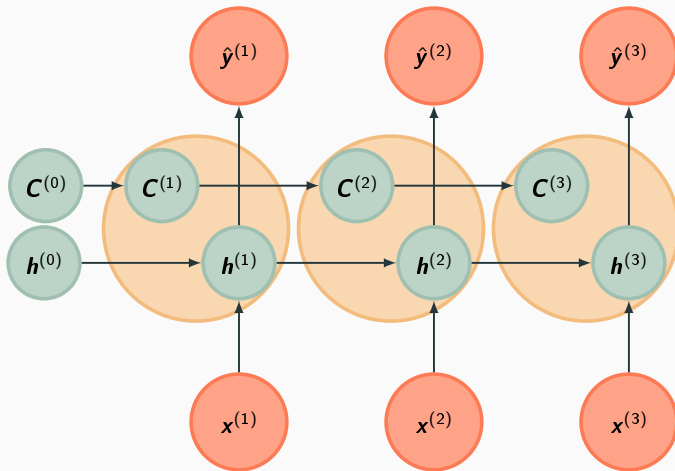


LSTM

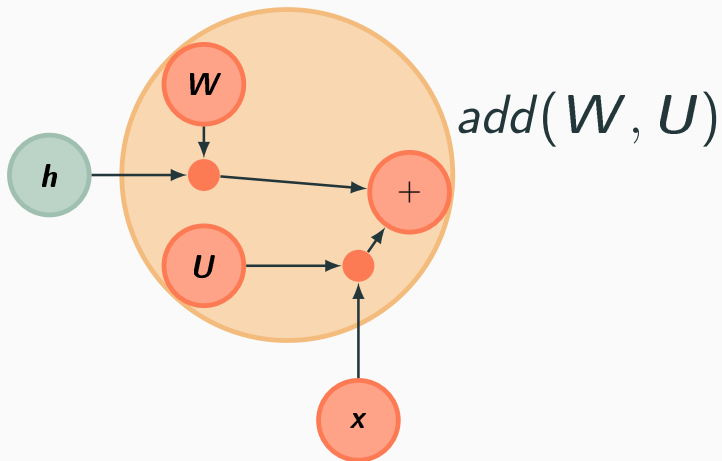
LSTM



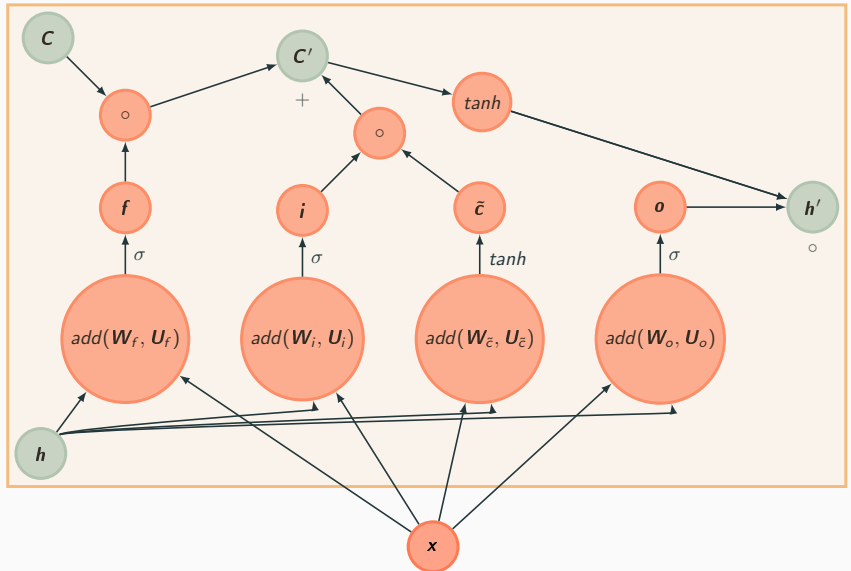
LSTM: unfolded model



Simplification



LSTM: recurrence





I. Goodfellow, Y. Bengio, and A. Courville.

Deep Learning.

MIT Press, 2017.