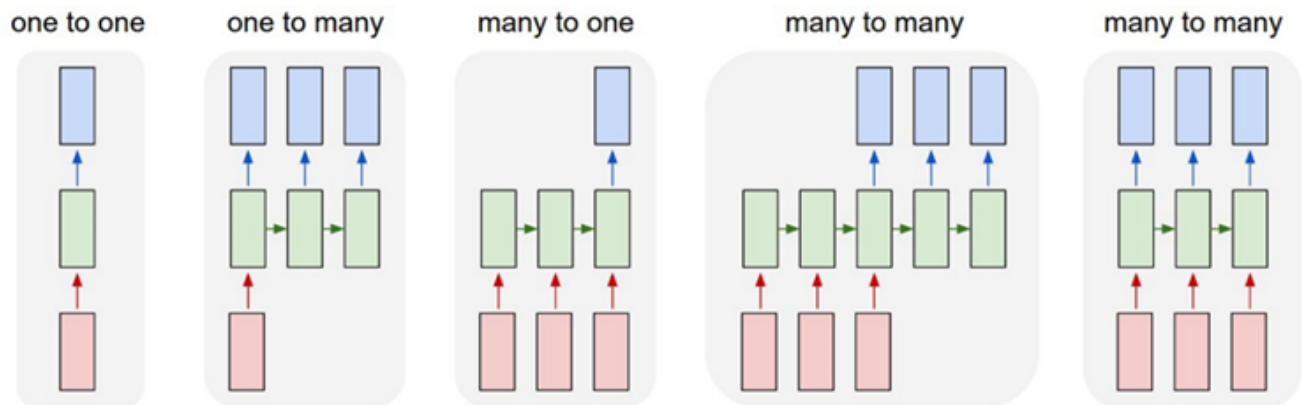# Assignment 3 , LSTM Implementation

Requirements:

1, Implement the LSTM from scratch using Numpy.

2, Implement at least two options of RNN architectures mentioned below, Seq2Seq for NMT is must.

3, Provides activation options, such as tanh, leaky relu, elu, and etc.

4, Implement Recurrent dropout (optional)

5, Implement encoder and decoder for machine translation with your developed model and compare with Tensorflow / Pytorch implementations.

6, Implement bahdanau attention and luong attention (optional).

7,Optimization on LSTM layer, such as vectorizing for forward and back pass.

8, Implement and Compare with GRU   (optional)

9, NMT evaluation with BLEU score is required, other evaluation highly suggested(optional).

10, Optimization for training.

Refs:

https://arxiv.org/pdf/1409.2329

https://machinelearningmastery.com/use-dropout-lstm-networks-time-series-forecasting/