

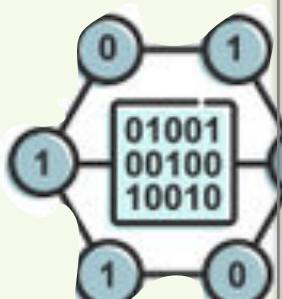
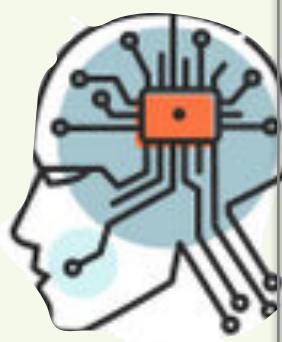
EXTRA INFO - this label will appear in slides with complementary information



SUMMARY: Recurrent Neural Networks: LSTM (multivariable)

[P] Practical applications of a LSTM in sequence to sequence;

Discussion of the several use cases / dataset that can be used on the course work to be done by the students. Datasets are real and subject to copyright so no information is stated here.



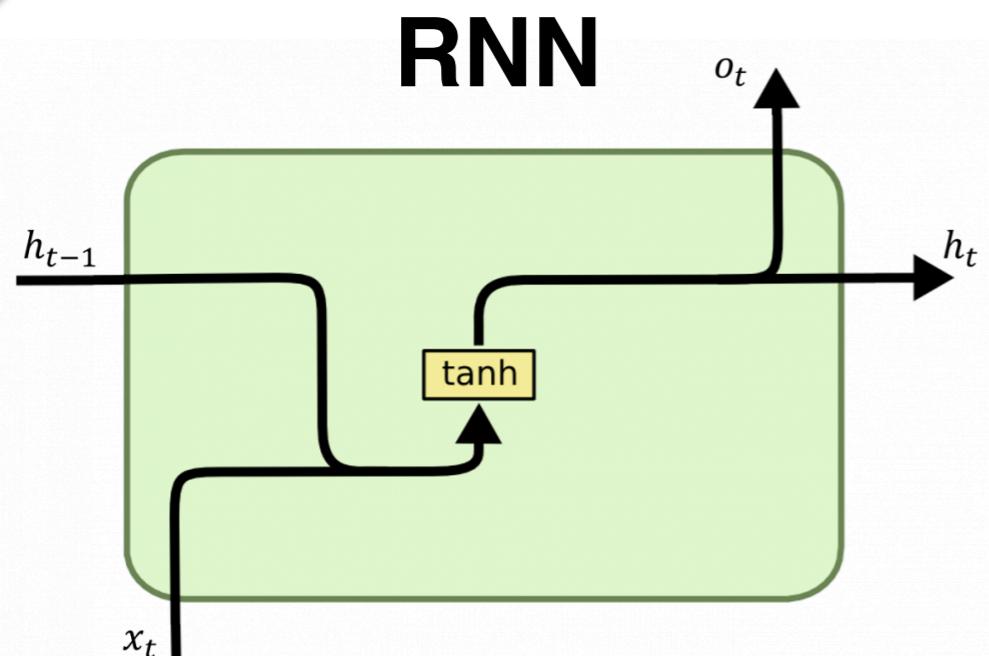
DATA MININ



NETWORKS

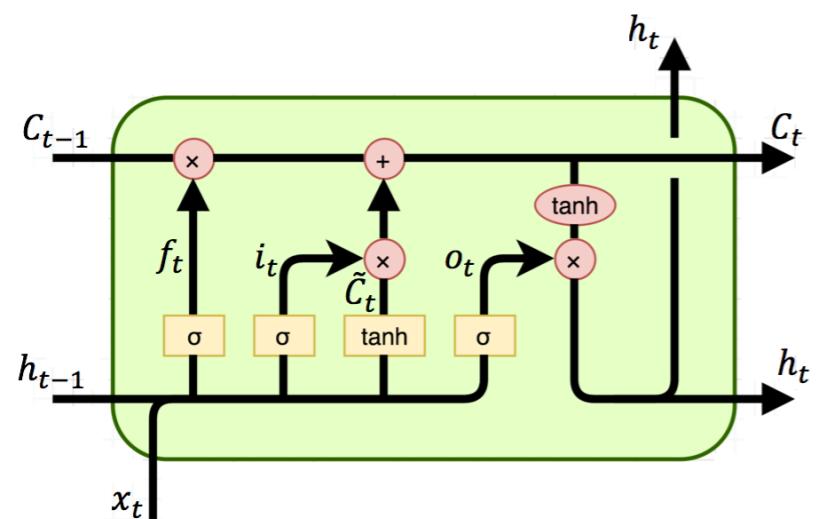
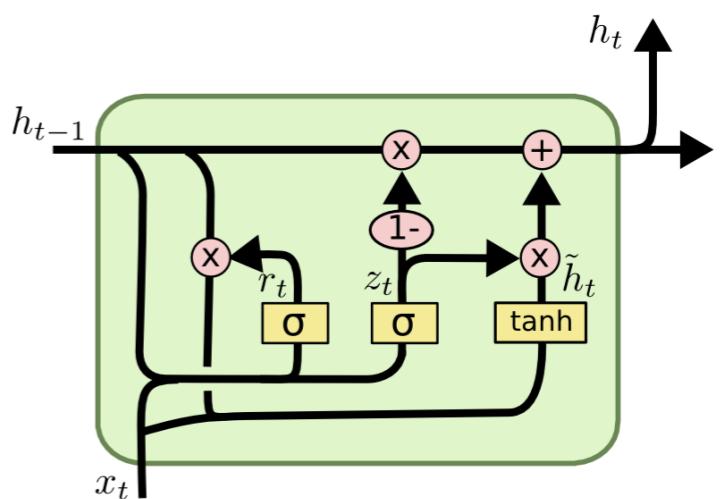
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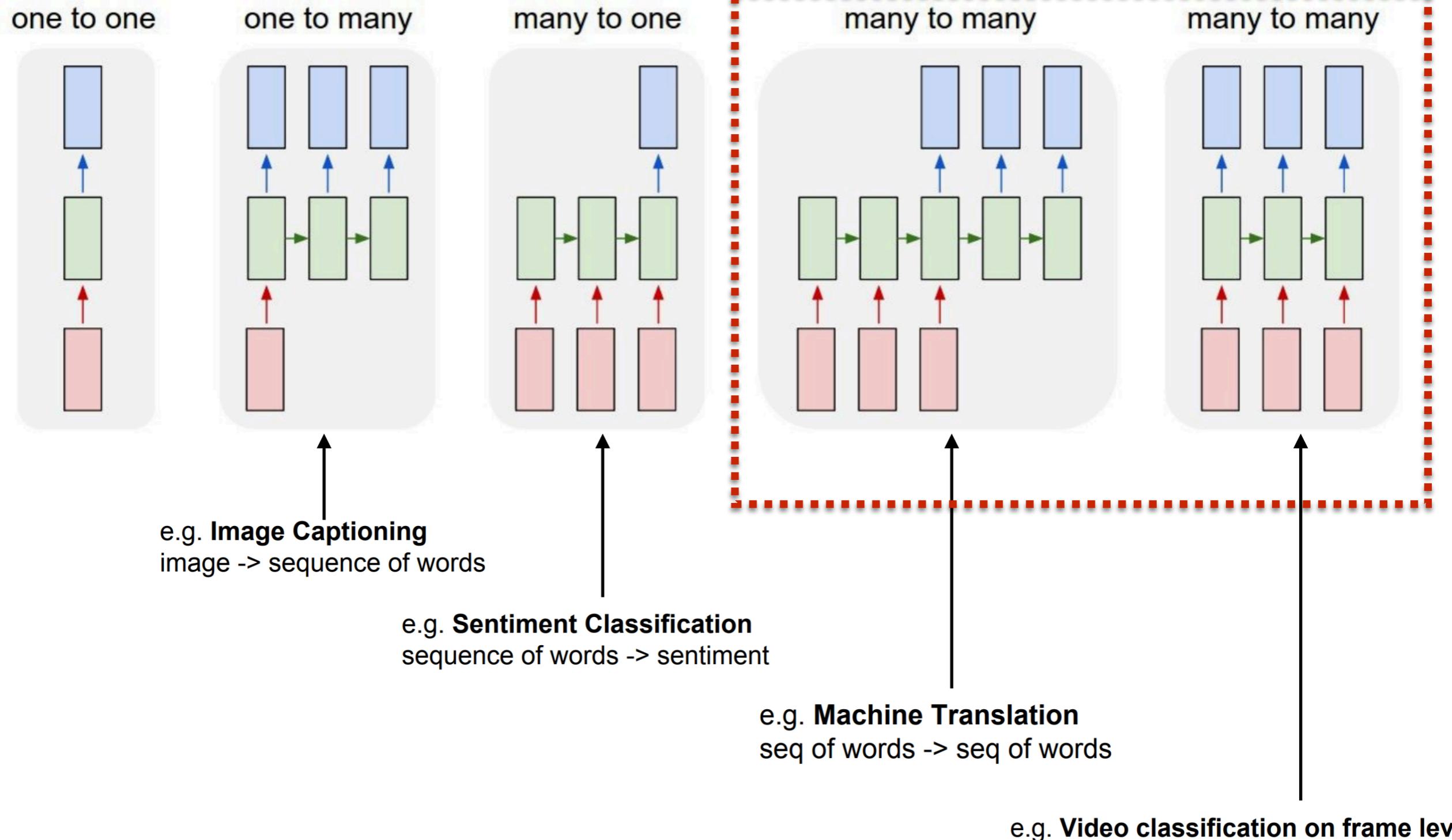
**Feed-Forward**

$$h_t = \sigma_h(i_t) = \sigma_h(U_h x_t + V_h h_{t-1} + b_h)$$

$$y_t = \sigma_y(a_t) = \sigma_y(W_y h_t + b_y)$$

LSTM – LONG-SHORT TERM MEMORY**GRU – GATED RECURRENT UNIT**

Recurrent Neural Networks: Process Sequences



PRATICAL TASK

1. Recall the concepts of LSTM (univariable);
2. Explore, in detail, the notebook multivariable_LSTM.ipynb
3. Answer several questions about it, e.g.: changing the NA fills from the previous day to the average has any impact on the results?
4. Construct a new notebook for E3D3 and compare it with the cases E1D1 and E2D2. When do we expect overfitting? When the number of parameters are “too high”?
5. In groups, change the “dataset” file to some different situation (i.e. choose a dataset from UCI) and explain the results.

DISCUSSION OF THE COURSE WORK

Discussion of the several use cases / dataset that can be used on the course work to be done by the students. Datasets are real and subject to copyright so no information is stated here.