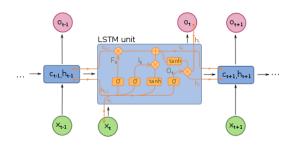
Deep Learning par la Pratique

Long-Short Term Memory

## **Long-Short Term Memory**



• 
$$F_t = \sigma(W_F * X_t + U_F * h_{t-1} + b_F)$$
 (forget gate)

• 
$$I_t = \sigma(W_I * X_t + U_I * h_{t-1} + b_I)$$
 (input gate)

• 
$$O_t = \sigma(W_O * x_t + U_O * h_{t-1} + b_O)$$
 (output gate)

• 
$$c_t = F_t \circ c_{t-1} + I_t \circ \tanh(W_c * X_t + U_c * h_{t-1} + b_c)$$

$$\bullet \ \, h_t = O_t \circ \tanh(c_t)$$

$$\bullet o_t = f(W_o * h_t + b_o)$$

1

## **Long-Short Term Memory**

vanishing gradient "résolu" (ou presque)

