$$f_t = \sigma(W_f h_{t-1} + U_f x_t)$$
$$i_t = \sigma(W_i h_{t-1} + U_i x_t)$$
$$o_t = \sigma(W_o h_{t-1} + U_o x_t)$$
$$\tilde{C}_t = \tanh(W_c h_{t-1} + U_c x_t)$$
$$C_t = f_t \odot C_{t-1} + i_t \odot \tilde{C}_t$$
$$h_t = o_t \odot \tanh(C_t)$$