23/09/2021

Ritika Nair

1. a) c_{t-1} = cell state at time t-1
   b) h_{t-1} = output vector from time t-1
   c) x_t = input feature vector for time t

2. a) c_t = cell state at time t
   b) h_t = output vector at time t

3. c_{t-1}

4. c_t

5. a) h_{t-1}, x_t

   b) h_{t-1}, x_t

   c) h_{t-1}, x_t

6. c_{t-1}, h_{t-1}, x_t

7. h_{t-1}, x_t, c_t

8. $a \circ b = [1, 4, 5] \circ [2, 6, 9] = [2, 24, 45]$

9. $S(x) = 1/(1 + e^{-(W_f x_t + U_f h_{t-1} + b_f)})$
   where $x = W_f x_t + U_f h_{t-1} + b_f$

10. $c_t = f_t \circ c_{t-1} + i_t \circ \tanh(W_c x_t + U_c h_{t-1} + b_c)$