

# LSTM Architecture: Three Smart Gates

What to  
**FORGET?**

What to  
**REMEMBER?**

What to  
**OUTPUT?**

Output  
 $h_t$

*Cell State (Long-term Memory)*

$C_{t-1}$

$C_t$

**Forget Gate**  
 $\times$

**Input Gate**  
 $+$

**Output Gate**  
 $\rightarrow$

$h_{t-1}, x_t$   
Previous output  
+ Current input

