



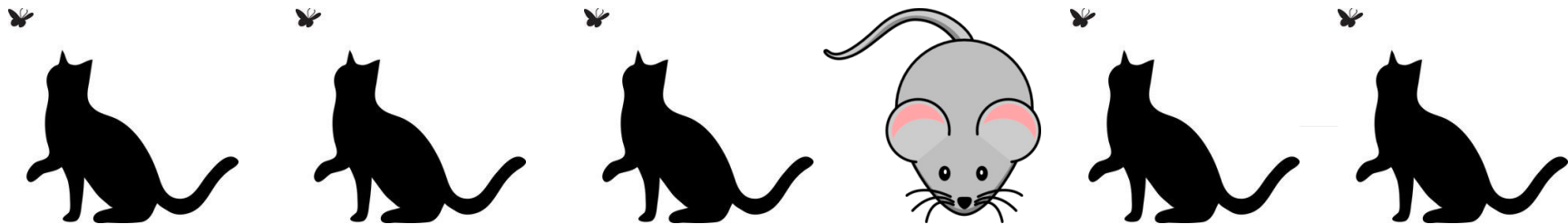
门控循环单元 GRU



关注一个序列



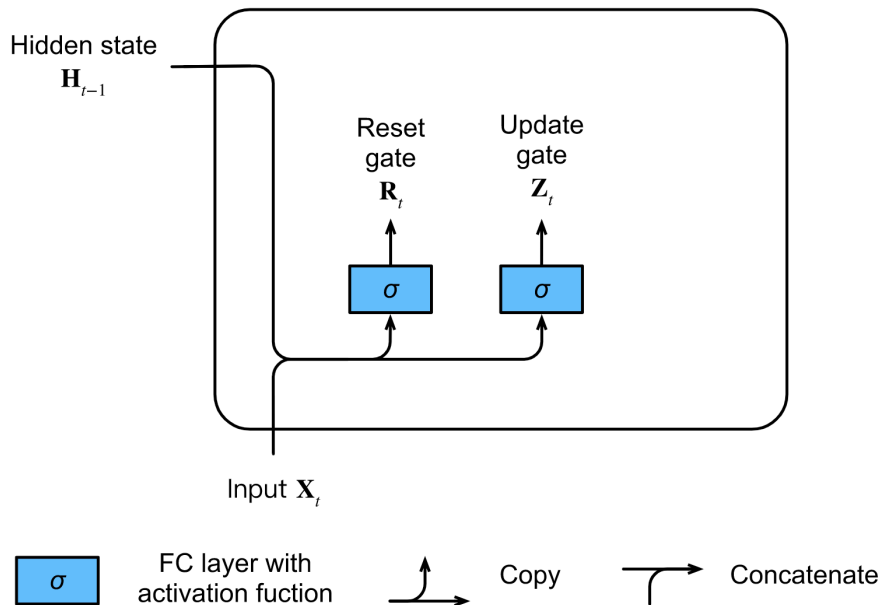
- 不是每个观察值都是同等重要



- 想只记住相关的观察需要：
 - 能关注的机制（更新门）
 - 能遗忘的机制（重置门）

$$R_t = \sigma(X_t W_{xr} + H_{t-1} W_{hr} + b_r),$$

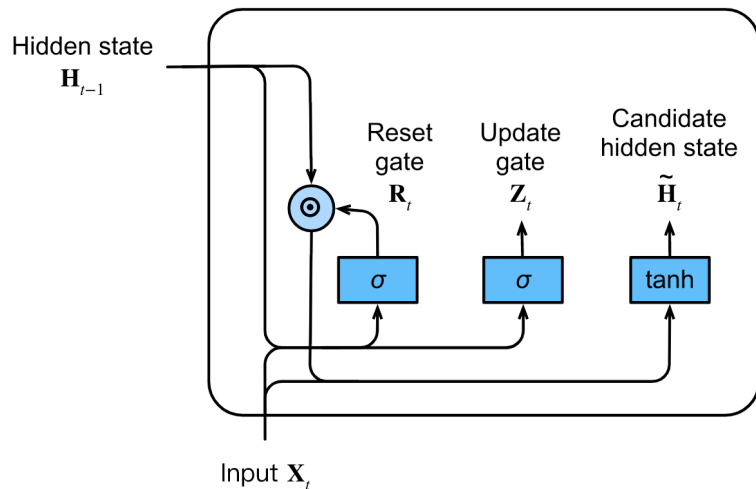
$$Z_t = \sigma(X_t W_{xz} + H_{t-1} W_{hz} + b_z)$$



候选隐状态



$$\tilde{H}_t = \tanh(X_t W_{xh} + (R_t \odot H_{t-1}) W_{hh} + b_h)$$



FC layer with
activation function



Elementwise
operator



Copy

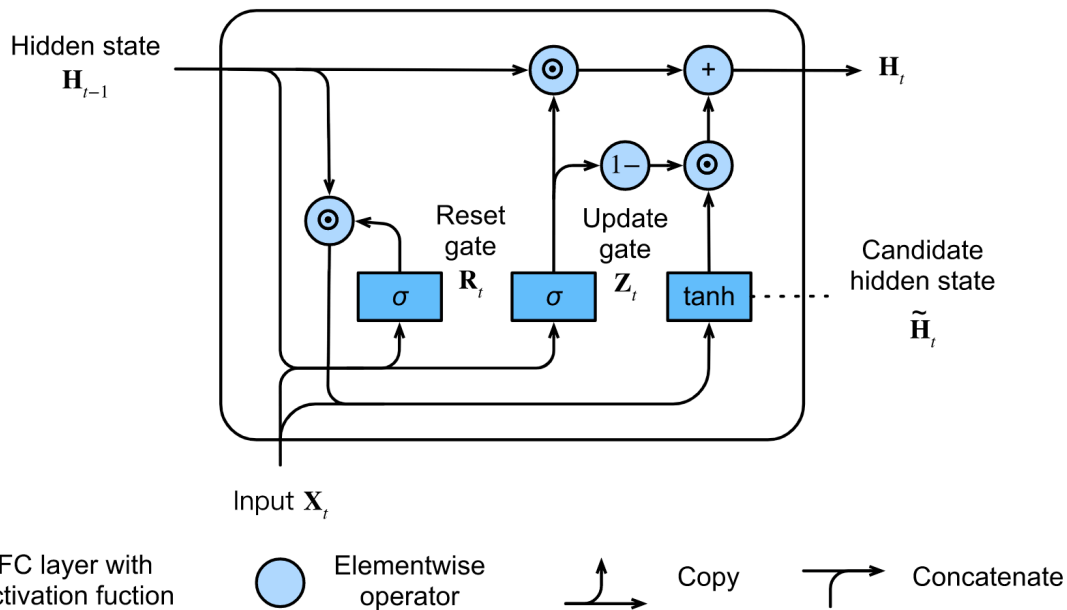


Concatenate

隐状态



$$H_t = Z_t \odot H_{t-1} + (1 - Z_t) \odot \tilde{H}_t$$



总结



$$R_t = \sigma(X_t W_{xr} + H_{t-1} W_{hr} + b_r),$$

$$Z_t = \sigma(X_t W_{xz} + H_{t-1} W_{hz} + b_z)$$

$$\tilde{H}_t = \tanh(X_t W_{xh} + (R_t \odot H_{t-1}) W_{hh} + b_h)$$

$$H_t = Z_t \odot H_{t-1} + (1 - Z_t) \odot \tilde{H}_t$$

