$$V(s) = E[G_t \mid S_t = s]$$

$$E[R_{t+1} + \gamma R_{t+2} + \gamma^2 R_{t+3} \dots \mid S_t = s]$$

$$E[R_{t+1} + \gamma (R_{t+2} + \gamma R_{t+3} \dots) \mid S_t = s]$$

G_{t+1}

$$E[R_{t+1} + \gamma V(s') \mid S_t = s]$$

Immediate Reward

Discounted value of successor state (s')