2025 March 24

Monday, March 24, 2025 12:59

$$U_i(s) = r(s) + \gamma \max_a \sum_{s'} P(s' \mid s,a) u(s')$$

$$= 1 + (0.7) \max_a \sum_{s'} P(s' \mid s,a) u(s')$$

$u(0) = 0.9$ $u(1) = 0.6$

s, a	$s'=0$	$s'=1$
$0,0$	0.4	0.6
$0,1$	0.8	0.2
$1,0$	0.3	0.7
$1,1$	0.9	0.1

$$u(0) = 1 + 0.7 \max($$

$$P(s'=0 \mid 0,0)\, u(0) + P(s'=1 \mid 0,0)\, u(1),$$

$$P(s'=0 \mid 0,1)\, u(0) + P(s'=1 \mid 0,1)\, u(1))$$

$$= 1 + 0.7 \max($$

$$0.4 \cdot 0.9 + 0.6 \cdot 0.6)$$

$$0.8 \cdot 0.9 + 0.2 \cdot 0.6)$$