

MDPs Study Guide (AIMA 17)

Artificial Intelligence

1 Markov Decision Processes

1. What are the components of a Markov Decision Process?

2. What is the role of γ in the calculation of infinite horizon returns, $G_t = \sum_{k=0}^{\infty} \gamma^k r_{t+k+1}$?

2 Policies

1. In the context of Markov Decision Processes, what is a policy?
2. In the context of Markov Decision Processes, what is a stochastic policy?
3. How many optimal policies are there in an MDP?
4. Given the following optimal state values:

3	0.8516	0.9078	0.9578	+1
2	0.8016		0.7003	-1
1	0.7453	0.6953	0.6514	0.4279
	1	2	3	4

What is the deterministic optimal policy, $\pi(s)$?