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AI Final Exam Lectures(1-10)

AI Exam 2 Review

Artificial Intelligence CS...

CS452 Parallel Algorith...

AI Final Exam Lectu...

Equations to know

Bellmans

$$V^*(s) = \max_a \sum_{s'} T(s, a, s') [R(s, a, s') + \gamma V^*(s')]$$

now ↑ next action ↑
 Probability of a state *Calculate all the states answer w/ the max reward
 reward

Policy Evaluation

$$V_{k+1}^\pi(s) \leftarrow \sum_{s'} T(s, \pi(s), s') [R(s, \pi(s), s') + \gamma V_k^\pi(s')]$$

π function/variable for Policy efficiency: $O(S^2)$ per iteration
 *Calculating the value you were told to take.

Fixed Value

$$\arg\max_a \sum_{s'} T(s, a, s') [R(s, a, s') + \gamma V^\pi(s')]$$

efficiency: $O(S^2 A)$ per iteration

action

that gave you
biggest #

Value Iteration

*update policy based on the best value & updates as you go

$$V_{k+1}(s) \leftarrow \max_a \sum_{s'} T(s, a, s') [R(s, a, s') + \gamma V_k(s')]$$

Fixed Current Policy

Fixed Current Policy

$$V_{k+1}^{\pi_i}(s) \leftarrow \sum_{s'} T(s, \pi_i(s), s') [R(s, a, s') + \gamma V^{\pi_i}(s')]$$