Markov Decision Processes

Decision making and reinforcement learning

* States – represents something and we have a way of knowing which state we are in
* Model – T(s, a s’) ~ Pr(s’ | s,a) – transition model – physics of the world – rules of the game. Produces the probability that you will transition to state s-prime from original state given an action.
* Actions – A(s), A - things you can do in a particular state
* Reward – R(s), R(s,a), R(s,a,s’) – reward of a value entering a state
  + Delayed rewards
  + Minor actions matter
* Policy - – solution to a markov decision process. \* is the optimal policy that maximizes reward
* Markovian property – only the present matters, previous states do not matter. Can make current state into something that “remembers” though.
* MDP doesn’t give a plan. It gives an action given a state. You can “infer” a plan.



