

Lecture 2: Markov Decision Processes

└ Extensions to MDPs

└ Infinite MDPs

Infinite MDPs

(no exam)

The following extensions are all possible:

- Countably infinite state and/or action spaces
 - Straightforward
- Continuous state and/or action spaces
 - Closed form for linear quadratic model (LQR)
- Continuous time
 - Requires partial differential equations
 - Hamilton-Jacobi-Bellman (HJB) equation
 - Limiting case of Bellman equation as time-step $\rightarrow 0$