Decision-time Planning

Main Takeaways

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Common to use CEM

- Avoids local optima

- Can handle deterministic and stochastic dynamics

- Avoids exploding/vanishing gradients

Use MPC to make CEM closed loop

Consider infinite horizon via learned $Q_\theta(s, a)$

Decision-time Planning

Main Takeaways

Common to use CEM

- Avoids local optima
- Can handle deterministic and stochastic dynamics
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Use MPC to make CEM closed loop

Consider infinite horizon via learned $Q_\theta(s, a)$

Learning Objectives

Understand

1. ~~What a “model” is in model-based RL~~
2. ~~How a “model” can aid decision making~~
3. ~~Differences between background and decision-time planning~~
4. ~~Decision-time planning strategies for continuous actions~~
5. Sources of uncertainty in model-based RL
6. Rationale and insights for decision-making under uncertainty