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# Decision-time Planning

**Trajectory optimization**



Observe states

$$\text{Plan } a_0, \dots, a_H \text{ to maximise return } \sum_{t=0}^H \gamma^t r(s_t, a_t) \quad \text{s.t. } s_0 = s$$

Execution



# Decision-time Planning

## Trajectory optimisation

Observe state  $s$

Plan  $a_0, \dots, a_H$  to maximise return  $\sum_{t=0}^H \gamma^t r(s_t, a_t)$  s.t.  $s_0 = s$

Execute each action

# Trajectory Optimisation

Shooting methods

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Collocation methods

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