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## What is a "Model"?

### Definition: a model is a representation that explicitly encodes knowledge about the structure of the environment and task.

### Dynamics (transition) model

#### Reward model

### Inverse dynamics model

#### Model of distance

#### Model of future returns

 $= f(s_t, a_t)$ 

 $S_{t+1}$ 

 $= f(s_t, a_t)$ 

 $r_{t+1}$ 

 $a_t = f^{-1}(s_t, s_{t+1})$ 

 $A(\mathbf{N})$ 

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Jar

 $Q(s_t, a_t)$ 

# Typically this is what's meant in model-based RL

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Definition: a model is a representation that **explicitly** encodes knowledge about the structure of the environment and task.

$$s_{t+1} = f(s_t, a_t)$$

Reward model

$$r_{t+1} = f(s_t, a_t)$$

Inverse dynamics model

$$a_t = f^{-1}(s_t, s_{t+1})$$

Model of distance

$$d_{ij} = f_d(s_i, s_j)$$

Model of future returns

$$G_t = Q(s_t, a_t)$$

Typically this is what's meant in model-based RL

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