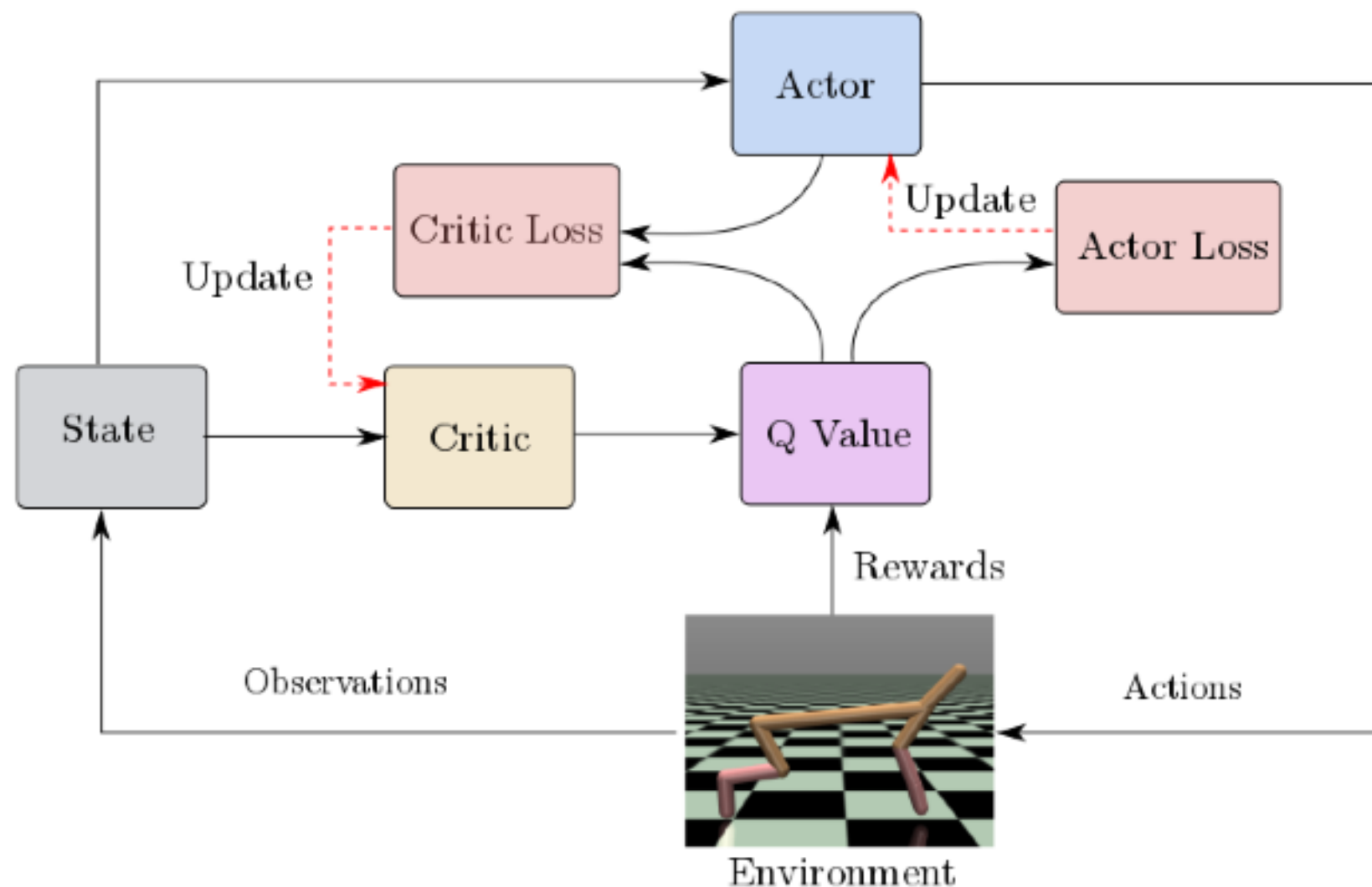


# Database Generation with Curiosity Driven Exploration

- Deep Deterministic Policy Gradients (DDPG)



# DDPG

- Actor tries to approximate the best policy which maps a state to optimal action

$$\mu(\theta^\mu) : s_t \rightarrow a_t$$

- Critic tries to approximate the predict the correct Q value

$$Q_c(\theta^{Q_c}) : s_t, a_t \rightarrow Q$$

- Critic is trained to Satisfy Bellman Equation

$$L(\theta^{Q_c}) = (Q_c - (r_t + \gamma Q(s_{t+1}, a_{t+1})^\pi))^2,$$

- Actor is trained by policy gradients given by,

$$\frac{\delta Q_c}{\delta \theta^\mu} = \frac{\delta Q_c}{\delta a} \frac{\delta a}{\delta \theta^\mu},$$