

$$\begin{aligned} v_{k+1}(s) &= \sum_{a \in \mathcal{A}} \pi(a|s) \left( \mathcal{R}_s^a + \gamma \sum_{s' \in \mathcal{S}} \mathcal{P}_{ss'}^a v_k(s') \right) \\ \mathbf{v}^{k+1} &= \mathbf{\mathcal{R}}^{\mathbf{\pi}} + \gamma \mathbf{\mathcal{P}}^{\mathbf{\pi}} \mathbf{v}^k \end{aligned}$$