- State Space $\mathcal{S}$: Let $\mathbf{s_t} = \{s_t^1, ..., s_t^n\}$ denote the state of the environment, where s_t^i denotes the state of the i^{th} object at time t and n denotes the number of objects.
- Action Space $\mathcal{A}$: Let $a_t = \langle a_t^h, a_t^r \rangle$ denote the joint action at time t, where a_t^h and a_t^r denote the human and robot actions respectively.
- Robot's policy $\pi^r\colon \mathcal{S} \times \mathcal{A}^r \to [0, 1]$, where $\mathcal{A}^r$ denotes the set of possible robot actions. $\pi^r(\mathbf{s}, a^r)$ specifies the probability of choosing action a^r in state $\mathbf{s}$.