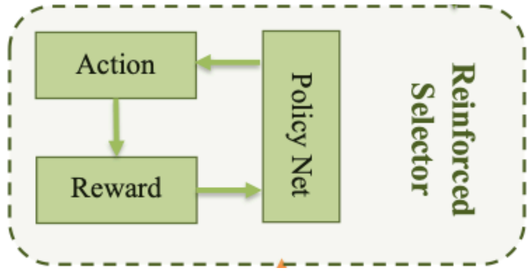
Methodology

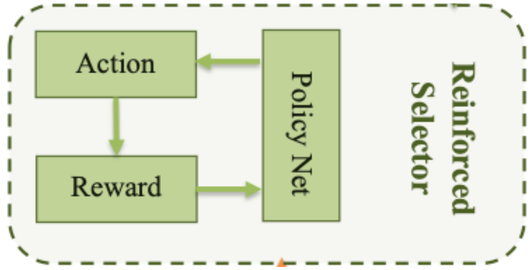
Data Selection via Reinforcement Learning - *Action*



- Then the action $a_i^{(k)}$ is sampled according to the output probability.
- The policy can be represented as:
- $$\pi_{\theta_s}\left(s_i^{(k)}, a_i^{(k)}\right) = \begin{cases} p_i^{(k)} & \text{if } a_i^{(k)} = 1 \\ 1 - p_i^{(k)} & \text{if } a_i^{(k)} = 0 \end{cases}$$

Methodology

Data Selection via Reinforcement Learning - *Reward*



- Use performance changes of detection model $D_n\left(\cdot;\theta_n\right)$ as the reward function
- Given $\tilde{X}^{(k)} = \{x_1^{(k)}, x_2^{(k)}, \cdots, x_B^{(k)}\}$, the actions of retaining or removing are made based on the probability output from the policy network
  - To evaluate the performance changes, need to set a baseline accuracy acc
  - Calculate acc with $D_n\left(\cdot;\theta_n\right)$ on validation dataset
  - Then new accuracy acc_k can obtained with the retrained model
- Finally, the reward R_k for k-th bag data $\left\{x_i^{(k)}\right\}_{i=1}^{B}$: $R_k = acc_k - acc$