

Algorithm 9: PerformStochasticSimulations**Input** : $\vec{X}, \vec{B}, \vec{\sigma}, \mathcal{D}$ **ConfigParams:** noSimulations, maxSimBudget, \overrightarrow{PB} , CB**Output** : result, $O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N1 N \leftarrow 02 **repeat**3 | cost.m, cost.sd, $\overrightarrow{p.m}, \overrightarrow{p.sd} \leftarrow \text{MonteCarloSimulation}(\vec{X}, \vec{B}, \vec{\sigma}, \mathcal{D}, \text{noSimulations})$ 4 | $O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}, N \leftarrow \text{UpdateCandidateStats}(\text{cost.m}, \text{cost.sd}, \overrightarrow{p.m}, \overrightarrow{p.sd}, \text{noSimulations})$ 5 | $\overrightarrow{conf} \leftarrow \text{Confidence}(\overrightarrow{SC.m} \geq \overrightarrow{PB})$ 6 | // $\epsilon \ll \text{probabilityBound}$. e.g., $\epsilon = 0.15$ 7 | $\overrightarrow{refConf} \leftarrow \text{Confidence}(\overrightarrow{SC.m} \leq \overrightarrow{PB} - \epsilon)$ 8 | N \leftarrow N + noSimulations9 **until** $\forall_{i \in \mathcal{D}} \text{conf}_i \geq CB$ or $\exists_{i \in \mathcal{D}} \text{refConf}_i \geq CB$ or $\text{budget} \geq \text{maxSimBudget}$ 10 **if** $\forall_{i \in \mathcal{D}} \text{conf}_i \geq CB$ **then**11 | result \leftarrow accept12 **else if** $\exists_{i \in \mathcal{D}} \text{refConf}_i \geq CB$ **then**13 | result \leftarrow reject14 **else if** $\text{budget} \geq \text{maxSimBudget}$ **then**15 | result \leftarrow not-reject16 **end**17 **return** result, $O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N