Artificial Intelligence

Jason

Saturday 2$^{\text{nd}}$ December, 2023; 21:25

Assignment 0

Question 1. Exact Inference Observation: Write down the equation of the inference problem you are trying to solve.

$\text{new\_belief}[p] = getObservationProb(observation, gameState.getPacmanPosition(), p, self.getJailPositi}$
$old\_belief[p]$
getObservationProb(observation, pacmanPosition, position, jailPosition) =
P(noisydistance |pacman position, ghost position)

Question 2. Exact Inference with Time Elapse: Write down the equation of the inference problem you are trying to solve.

$\text{new\_belief}[p1] = \sum_{\substack{p \in allPositions \\ old\_belief[p] \neq 0}} old\_belief[p] \cdot getPositionDistribution(gameState, p)[p1]$

getPositionDistribution(gameState, ghostPosition) = P(ghost position at time t+1 |ghost position at time t)