Abstract

Biswas et al. [1] introduced a probabilistic approach to inference with limited information in sensor networks. They represented the sensor network as a Bayesian network and performed approximate inference using Markov Chain Monte Carlo (MCMC). The goal is to robustly answer queries even under noisy or partial information scenarios. We propose an alternative method based on simple Monte Carlo estimation; our method allows a distributed algorithm, pre-computation of probabilities, a more refined spatial analysis, as well as desiderata for sensor placement in the friendly agent surrounded by enemies problem. In addition, we performed experiments with real microphones and robots to determine the sensor correct response probability.