

Artificial Intelligence 2

Quiz #04 (dynamic Bayesian networks)

Define dynamic Bayesian network. Can it be transformed to a Hidden Markov Model? And what about vice versa?

What is inefficient about classical approximation techniques, such as likelihood weighting, when they are applied to a Dynamic Bayesian network? How can we resolve this problem?

Why particle filtering is called this way? Explain the method.

How does the sensor model look like for a perfect sensor?

How can one model a transient failure of sensor? And what about a permanent failure?

How can we model random variables over continuous domains in Bayesian networks?

What is a Kalman filter?

How can one use a Kalman filter for non-linear transition models?

What are the typical problems when tracking multiple objects?