

Artificial Intelligence 2

Quiz #01 (uncertainty and probability theory)

Can a purely logical agent work with uncertainty? If yes, how?

What is a sample space? Describe its properties.

Assume that we have two indistinguishable dice and we roll them. How many possible worlds will we get? What are their probabilities? What if the dice are distinguishable?

Is there any relation between random variables and possible worlds?

What is a full joint probability distribution?

What does inference do in probabilistic models?

Describe observed, hidden, and query random variables.

What is a conditional probability?

Describe product and chain rules.

How is normalization exploited when computing conditional probabilities?

Describe Bayes' rule.

What is a naïve Bayes model? In particular, why is it called naïve?

How is the Bayes' rule exploited when representing the full joint probability distribution?

What is the difference between causal and diagnostic direction?