Report of Bayesian Network lab

By Kevin Bollengier and Paul Chartier

Compare with Hugin Lite

Reflection

Brief explanation of our implementation

1) Building the empty network

   First we split the first line based on the comma to get all the names of the nodes and put these names in a list. For every node in that list we create a Node object with that name. We give an empty list of parents and probability tables as well. Then we add all the nodes to the bayesian network object.

2) Setting the parent nodes

   For every node we search the evidence in the given probabilities, strip it of all non alpha characters and split it. We know the first element in the list is the node itself and all the other elements starting at the second position are its parents, so we retrieve the node from the network and add them to the parents list.

3) Setting the prob tables

   We also know the previous tactic is feasible to search for the node in a network to add the probability tables, so the probabilities list contains the string (key) and the float value of the probability. And we also know again the first element of the key is the name of the node in a network, so we apply the same method as step 2.

4) Parsing the queries

   First we start looking in the network if we can find string literal queries somewhere in the node probability tables. If that is the case we return it. If it's a complement of one of the network nodes we change the - to a + but return it as 1 - the probability. As last resort we will do enumeration.