BayesiaLab

The Modeling and Decision Support tool for the Risk Manager

- Bayesian networks will allow you to model your expert knowledge relative your complete risk chain. The graphical representation of Bayesian networks and the BayesiaLab's ease of use make it an invaluable **Brain Storming** and **Communication** tool.
- If data describing experience feedback is available, you will be able to exploit all the power of unsupervised **learning** to extract from this data the **set of probabilistic relations that are really significant**, and then **to identify the probabilistic links between your risk factors**. This kind of learning is a real **knowledge discovery** tool and is very helpful for the **understanding** of your problems.
- Supervised learning will allow you to **characterize your main risk** (e.g. disaster, fraud …) by finding the **minimal subset of risk factors** that are really important.
- You will be able to rigorously take into account your expert knowledge and your experience feedback (Bayesian updating of the expert models with respect to the available data).
- BayesiaLab will enable you to test various **levers effects** (e.g. action that can reduce the risk) by adding nodes to your Bayesian networks. By associating cost nodes to these levers, you then will be able to **evaluate various action policies**.
- The BayesiaLab's **adaptive questionnaires** will return you the most relevant questions with respect to the information brought to the knowledge of your main risk variable and with respect to the cost associated to questions. A new set of ordered questions will be automatically returned after each answer.
- By using the BayesiaLab's **analysis toolbox**, you will really be able to **understand** your probabilistic models: analysis of the strength of the relations, analysis of the interaction between your main risk variable and the other variables, analysis of the relations linking all the variables with a specific value of your main risk variable, contradiction analysis to know if all the evidences support the same conclusion or if there are some contradicting evidences.
- Finally, you will be able to "play" with your models to easily test your hypothesis by carrying out **What-if scenarios**.