



Bayesware™ Discoverer

Knowledge Discovery using Bayesian Networks



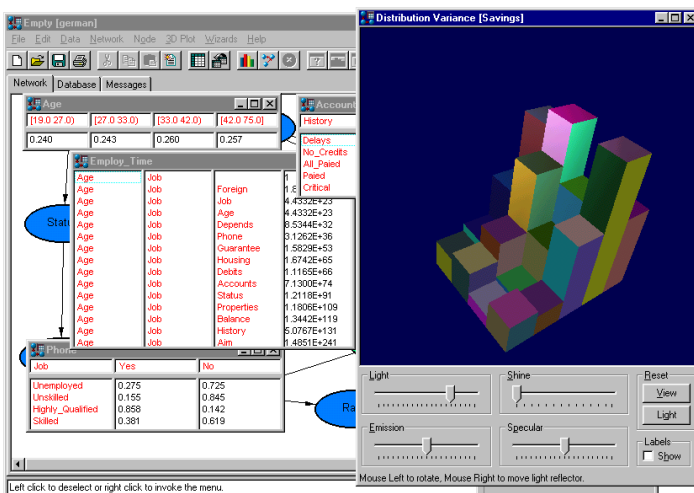
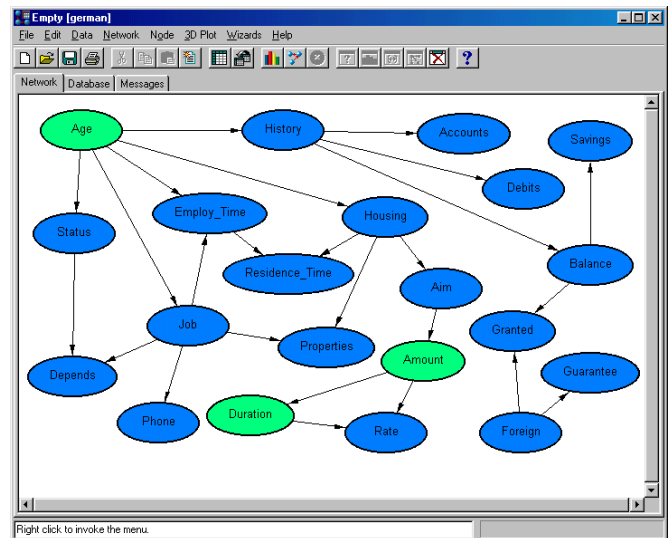
Bayesware Discoverer

Bayesware Discoverer is a program able to automatically discover causal probabilistic models from databases using Bayesian networks. Watch the easy four-step knowledge discovery process. For more information, visit our website at www.bayesware.com, or send an email to discoverer@bayesware.com.

Step 1: Bayesware Discoverer is supplied with a database of 1000 customers of a German bank applying for a loan. The database reports, for each customer, twenty-one values, such as Age, Marital Status, Credit History, and the outcome of the loan application.

Age	Foreign	Job	Status	History	Housing	Employ_Time	De
67	Yes	Skilled	Male_Single	Critical	Own	7more	1
22	Yes	Skilled	Female_Married	Paied	Own	1to4	1
49	Yes	Unskilled	Male_Single	Critical	Own	4to7	2
45	Yes	Skilled	Male_Single	Paied	Free	4to7	2
53	Yes	Skilled	Male_Single	Delays	Free	1to4	2
35	Yes	Unskilled	Male_Single	Paied	Free	1to4	2
53	Yes	Skilled	Male_Single	Paied	Own	7more	1
35	Yes	Highly_Qualified	Male_Single	Paied	Rent	1to4	1
61	Yes	Unskilled	Male_Divorced	Paied	Own	4to7	1
28	Yes	Highly_Qualified	Male_Married	Critical	Own	Unemployed	1
25	Yes	Skilled	Female_Married	Paied	Rent	1less	1
24	Yes	Skilled	Female_Married	Paied	Rent	1less	1
22	Yes	Skilled	Female_Married	Paied	Own	1to4	1
60	Yes	Unskilled	Male_Single	Critical	Own	7more	1
29	Yes	Skilled	Female_Married	Paied	Rent	1to4	2
32	Yes	Unskilled	Female_Married	Paied	Own	1to4	1
53	Yes	Skilled	Male_Single	Critical	Own	7more	1
25	Yes	Skilled	Male_Single	Paied	Own	1less	1
44	Yes	Highly_Qualified	Female_Married	Paied	Free	7more	1
31	Yes	Skilled	Male_Single	Own	Own	7more	2
48	Yes	Skilled	Male_Single	Critical	Own	1to4	1
44	Yes	Skilled	Male_Single	Paied	Rent	1to4	2
48	No	Unskilled	Male_Single	Critical	Rent	1less	2
44	Yes	Skilled	Male_Single	Critical	Own	1less	1
26	No	Unskilled	Male_Married	Critical	Own	1to4	1
36	Yes	Unskilled	Male_Single	Paied	Own	1to4	1
39	Yes	Unskilled	Male_Married	No_Credits	Own	7more	1
32	Yes	Skilled	Female_Married	All_Paied	Rent	1to4	1
34	Yes	Skilled	Male_Single	Paied	Own	7more	1
63	Yes	Skilled	Male_Single	Delays	Own	7more	1
32	Yes	Skilled	Male_Married	Paied	Own	1less	1

Step 2: Bayesware Discoverer automatically defines the variable, extracts a graph of dependencies, and quantifies the dependencies as probability distributions.



Step 4: The network is a self-contained decision support system that can be used to predict, explain, and simulate different scenarios. In this example, the system profiles the credit history and the chances of obtaining the loan for a married male working for more than seven years in a highly skilled capacity.

Step 3: Bayesware Discoverer can be used to explore various aspects of the extracted model, such as the probability distributions, variance, and likelihood of each dependency. Advanced interactive 3D graphics supports the visualization of complex interactions.

