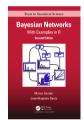
# bnlearn - an R package for Bayesian network learning and inference

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- Bayesian Network Repository
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info & code

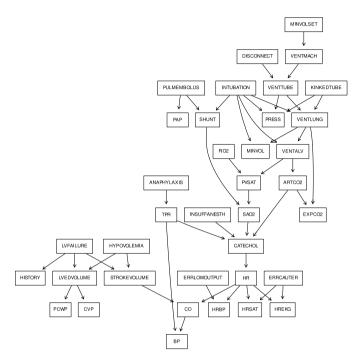


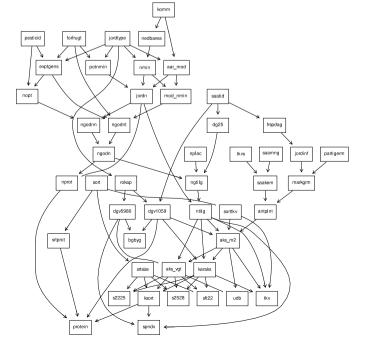
data & R code



data & R code

## Medium Networks (20-50 nodes)





## ALARM

Number of nodes: 37 Number of arcs: 46

Number of parameters: 509 Average Markov blanket size: 3.51

Average degree: 2.49 Maximum in-degree: 4

BIF (1.8kB)

**DSC** (1.7kB)

NET (1.3kB)

RDA (bn.fit) (2.1kB)

RDS (bn.fit) (1.1kB)

I. A. Beinlich, H. J. Suermondt, R. M. Chavez, and G. F. Cooper. The ALARM Monitoring System: A Case Study with Two Probabilistic Inference Techniques for Belief Networks. In Proceedings of the 2nd European Conference on Artificial Intelligence in Medicine, pages 247-256. Springer-Verlag, 1989.

## **BARLEY**

Number of nodes: 48 Number of arcs: 84

Number of parameters: 114005 Average Markov blanket size: 5.25

Average degree: 3.5 Maximum in-degree: 4

BIF (369kB)

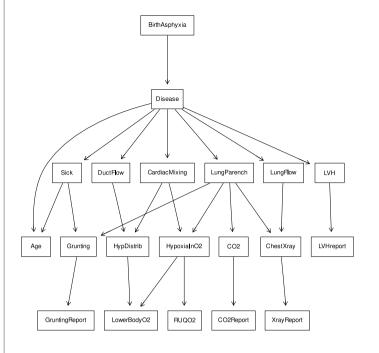
<u>DSC</u> (351kB)

**NET** (292kB)

RDA (bn.fit) (410kB)

RDS (bn.fit) (410kB)

Preliminary model for barley developed under the project: "Production of beer from Danish malting barley grown without the use of pesticides" by Kristian Kristensen , Ilse A. Rasmussen and others.



## CHILD

Number of nodes: 20 Number of arcs: 25

Number of parameters: 230 Average Markov blanket size: 3

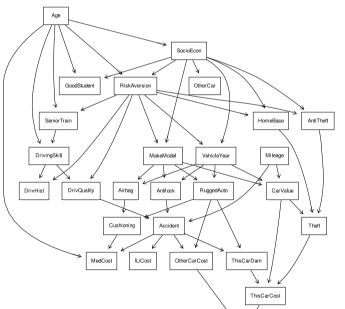
Average degree: 2.5 Maximum in-degree: 2

BIF (1.4kB)
DSC (1.3kB)

**NET** (1.1kB)

<u>RDA (bn.fit)</u> (1.8kB) <u>RDS (bn.fit)</u> (1.8kB)

D. J. Spiegelhalter, R. G. Cowell (1992). Learning in probabilistic expert systems. In Bayesian Statistics 4 (J. M. Bernardo, J. 0. Berger, A. P. Dawid and A. F. M. Smith, eds.), 447-466. Clarendon Press, Oxford.



PropCost

## INSURANCE

Number of nodes: 27 Number of arcs: 52

Number of parameters: 1008 Average Markov blanket size: 5.19

Average degree: 3.85 Maximum in-degree: 3

BIF (3.7kB)

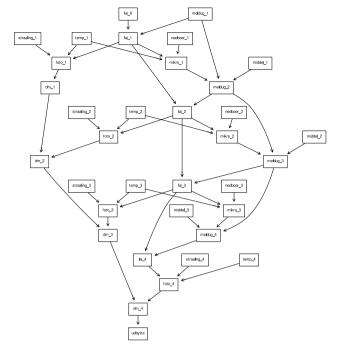
<u>DSC</u> (3.1kB)

<u>NET</u> (2.4kB)

RDA (bn.fit) (3.7kB)

RDS (bn.fit) (3.7kB)

J. Binder, D. Koller, S. Russell, and K. Kanazawa. Adaptive Probabilistic Networks with Hidden Variables. Machine Learning, 29(2-3):213-244, 1997.



## **MILDEW**

Number of nodes: 35 Number of arcs: 46

Number of parameters: 540150 Average Markov blanket size: 4.57

Average degree: 2.63 Maximum in-degree: 3

BIF (191kB)

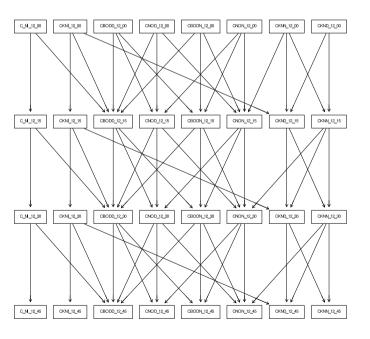
DSC (187kB)

NET (164kB)

RDA (bn.fit) (234kB)

RDS (bn.fit) (234kB)

A. L. Jensen and F. V. Jensen. MIDAS - An Influence Diagram for Management of Mildew in Winter Wheat. Proceedings of the Twelfth Conference on Uncertainty in Artificial Intelligence (UAI1996), pages 349–356.



## WATER

Number of nodes: 32 Number of arcs: 66

Number of parameters: 10083 Average Markov blanket size: 7.69

Average degree: 4.12 Maximum in-degree: 5

**BIF** (25kB)

<u>DSC</u> (23kB)

NET (6kB)

RDA (bn.fit) (18kB)

RDS (bn.fit) (18kB)

F. V. Jensen, U. Kjærulff, K. G. Olesen and J. Pedersen. Et Forprojekt Til et Ekspertsystem for Drift af Spildevandsrensning (An Expert System for Control of Waste Water Treatment - A Pilot Project). Technical Report, Judex Datasystemer A/S, Aalborg, 1989. In Danish.

Last updated on Tue Nov 29 13:13:23 2022 with bnleam 4.9-20221107 and R version 4.2.2 Patched (2022-11-10 r83330).



