

AN INTRODUCTION TO BAYESIAN NETWORKS F.V. Jensen. New York: Springer, 1996, pp. x + 178 + MS Windows disk.

Contents:

1. Introduction
2. Causal and Bayesian networks
3. Building Models
4. Propagation in Bayesian networks
5. Use of Bayesian network models
6. Actions
  - A. Construction of junction trees (proofs)
  - B. Value of information (proofs)

Bibliography

Index

Readership: Artificial Intelligence or Statistics teachers and students.

This humourously written book is “intended for both classroom use and self-study, and it addresses persons who are interested in exploiting the Bayesian network approach for the construction of decision support systems or expert systems.” The approach is that of modelling reasoning under uncertainty and will appeal to students of AI; for statistics students, these networks are causal probabilistic networks being “Bayesian” by use of Bayes’ theorem. Only random variables having finite number of possible values are considered.

Examples are used throughout to motivate and illustrate the modelling approach. The mathematical background is elementary calculus, graph theory, and probability theory. Exercises and a restricted version of the impressive commercial program HUGIN encourage the reader to construct their own models. However, with no documentation in the text, and only cursory help on the disk (the tutorial introduction is “under construction”) readers unfamiliar with HUGIN will require some time exploring the software before it becomes as useful as intended.

The book provides a useful introduction to a relatively new area and could form the basis of an interesting upper year undergraduate course.

University of Waterloo  
Waterloo, Canada

R.W. Oldford