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	Altri autori (Persone)	NaimPatrick MarcotBruce
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	Nota di contenuto	Bayesian Networks; Contents; Foreword; Preface; 1 Introduction to Bayesian networks; 1.1 Models; 1.2 Probabilistic vs. deterministic models; 1.3 Unconditional and conditional independence; 1.4 Bayesian networks; 2 Medical diagnosis; 2.1 Bayesian networks in medicine; 2.2 Context and history; 2.3 Model construction; 2.4 Inference; 2.5 Model validation; 2.6 Model use; 2.7 Comparison to other approaches; 2.8 Conclusions and perspectives; 3 Clinical decision support; 3.1 Introduction; 3.2 Models and methodology; 3.3 The Busselton network; 3.4 The PROCAM network; 3.5 The PROCAM Busselton network 3.6 Evaluation3.7 The clinical support tool: TakeHeartII; 3.8 Conclusion; 4 Complex genetic models; 4.1 Introduction; 4.2 Historical perspectives; 4.3 Complex traits; 4.4 Bayesian networks to dissect complex traits; 4.5 Applications; 4.6 Future challenges; 5 Crime risk factors analysis; 5.1 Introduction; 5.2 Analysis of the factors affecting crime risk; 5.3 Expert probabilities elicitation; 5.4 Data preprocessing; 5.5 A Bayesian network model; 5.6 Results; 5.7 Accuracy assessment;

5.8 Conclusions; 6 Spatial dynamics in France; 6.1 Introduction; 6.2 An indicator-based analysis
6.3 The Bayesian network model6.4 Conclusions; 7 Inference problems in forensic science; 7.1 Introduction; 7.2 Building Bayesian networks for inference; 7.3 Applications of Bayesian networks in forensic science; 7.4 Conclusions; 8 Conservation of marbled murrelets in British Columbia; 8.1 Context/history; 8.2 Model construction; 8.3 Model calibration, validation and use; 8.4 Conclusions/perspectives; 9 Classifiers for modeling of mineral potential; 9.1 Mineral potential mapping; 9.2 Classifiers for mineral potential mapping; 9.3 Bayesian network mapping of base metal deposit; 9.4 Discussion
9.5 Conclusions10 Student modeling; 10.1 Introduction; 10.2 Probabilistic relational models; 10.3 Probabilistic relational student model; 10.4 Case study; 10.5 Experimental evaluation; 10.6 Conclusions and future directions; 11 Sensor validation; 11.1 Introduction; 11.2 The problem of sensor validation; 11.3 Sensor validation algorithm; 11.4 Gas turbines; 11.5 Models learned and experimentation; 11.6 Discussion and conclusion; 12 An information retrieval system; 12.1 Introduction; 12.2 Overview; 12.3 Bayesian networks and information retrieval; 12.4 Theoretical foundations
12.5 Building the information retrieval system12.6 Conclusion; 13 Reliability analysis of systems; 13.1 Introduction; 13.2 Dynamic fault trees; 13.3 Dynamic Bayesian networks; 13.4 A case study: The Hypothetical Sprinkler System; 13.5 Conclusions; 14 Terrorism risk management; 14.1 Introduction; 14.2 The Risk Influence Network; 14.3 Software implementation; 14.4 Site Profiler deployment; 14.5 Conclusion; 15 Credit-rating of companies; 15.1 Introduction; 15.2 Naive Bayesian classifiers; 15.3 Example of actual credit-ratings systems; 15.4 Credit-rating data of Japanese companies
15.5 Numerical experiments

Sommario/riassunto	Bayesian Networks, the result of the convergence of artificial intelligence with statistics, are growing in popularity. Their versatility and modelling power is now employed across a variety of fields for the purposes of analysis, simulation, prediction and diagnosis. This book provides a general introduction to Bayesian networks, defining and illustrating the basic concepts with pedagogical examples and twenty real-life case studies drawn from a range of fields including medicine, computing, natural sciences and engineering. Designed to help analysts, engineers, scientists and profe

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