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Titolo	Probabilistic Graphical Models [[electronic resource]] : Principles and Applications // by Luis Enrique Sucar
Pubbl/distr/stampa	London : , : Springer London : , : Imprint : Springer, , 2015
ISBN	1-4471-6699-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 recurso en línea (xxiv, 253 páginas)
Collana	Advances in Computer Vision and Pattern Recognition, , 2191-6586
Disciplina	004
Soggetti	Mathematical statistics Artificial intelligence Pattern recognition Probabilities Electrical engineering Probability and Statistics in Computer Science Artificial Intelligence Pattern Recognition Probability Theory and Stochastic Processes Electrical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Part I: Fundamentals -- Introduction -- Probability Theory -- Graph Theory -- Part II: Probabilistic Models -- Bayesian Classifiers -- Hidden Markov Models -- Markov Random Fields -- Bayesian Networks: Representation and Inference -- Bayesian Networks: Learning -- Dynamic and Temporal Bayesian Networks -- Part III: Decision Models -- Decision Graphs -- Markov Decision Processes -- Part IV: Relational and Causal Models -- Relational Probabilistic Graphical Models -- Graphical Causal Models.
Sommario/riassunto	This accessible text/reference provides a general introduction to probabilistic graphical models (PGMs) from an engineering perspective. The book covers the fundamentals for each of the main classes of PGMs, including representation, inference and learning principles, and reviews real-world applications for each type of model. These

applications are drawn from a broad range of disciplines, highlighting the many uses of Bayesian classifiers, hidden Markov models, Bayesian networks, dynamic and temporal Bayesian networks, Markov random fields, influence diagrams, and Markov decision processes. Topics and features: Presents a unified framework encompassing all of the main classes of PGMs Explores the fundamental aspects of representation, inference and learning for each technique Describes the practical application of the different techniques Examines the latest developments in the field, covering multidimensional Bayesian classifiers, relational graphical models and causal models Provides exercises, suggestions for further reading, and ideas for research or programming projects at the end of each chapter Suggests possible course outlines for instructors in the preface This classroom-tested work is suitable as a textbook for an advanced undergraduate or a graduate course in probabilistic graphical models for students of computer science, engineering, and physics. Professionals wishing to apply probabilistic graphical models in their own field, or interested in the basis of these techniques, will also find the book to be an invaluable reference. Dr. Luis Enrique Sucar is a Senior Research Scientist at the National Institute for Astrophysics, Optics and Electronics (INAOE), Puebla, Mexico.
