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Titolo	Probabilistic Inductive Logic Programming [[electronic resource] /] / edited by Luc De Raedt, Paolo Frasconi, Kristian Kersting, Stephen H. Muggleton
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Descrizione fisica	1 online resource (VIII, 341 p.)
Collana	Lecture Notes in Artificial Intelligence ; ; 4911
Disciplina	005.1
Soggetti	Artificial intelligence Computer programming Mathematical logic Algorithms Data mining Bioinformatics Artificial Intelligence Programming Techniques Mathematical Logic and Formal Languages Algorithm Analysis and Problem Complexity Data Mining and Knowledge Discovery Computational Biology/Bioinformatics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Research report.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Probabilistic Inductive Logic Programming -- Formalisms and Systems -- Relational Sequence Learning -- Learning with Kernels and Logical Representations -- Markov Logic -- New Advances in Logic-Based Probabilistic Modeling by PRISM -- CLP(): Constraint Logic Programming for Probabilistic Knowledge -- Basic Principles of Learning Bayesian Logic Programs -- The Independent Choice Logic and Beyond -- Applications -- Protein Fold Discovery Using Stochastic Logic Programs -- Probabilistic Logic Learning from Haplotype Data -- Model Revision from Temporal Logic Properties in Computational

The question, how to combine probability and logic with learning, is getting an increased attention in several disciplines such as knowledge representation, reasoning about uncertainty, data mining, and machine learning simultaneously. This results in the newly emerging subfield known under the names of statistical relational learning and probabilistic inductive logic programming. This book provides an introduction to the field with an emphasis on the methods based on logic programming principles. It is concerned with formalisms and systems, implementations and applications, as well as with the theory of probabilistic inductive logic programming. The 13 chapters of this state-of-the-art survey start with an introduction to probabilistic inductive logic programming; moreover the book presents a detailed overview of the most important probabilistic logic learning formalisms and systems such as relational sequence learning techniques, using kernels with logical representations, Markov logic, the PRISM system, CLP(BN), Bayesian logic programs, and the independent choice logic. The third part provides a detailed account of some show-case applications of probabilistic inductive logic programming. The final part touches upon some theoretical investigations and includes chapters on behavioural comparison of probabilistic logic programming representations and a model-theoretic expressivity analysis.
