

1. Record Nr.	UNINA9910783135703321
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Titolo	Knowledge representation and reasoning [[electronic resource] /] / Ronald J. Brachman, Hector J. Levesque
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Morgan Kaufmann, c2004
ISBN	1-281-04931-X 9786611049317 0-08-048932-X
Edizione	[1st edition]
Descrizione fisica	1 online resource (413 p.)
Collana	The Morgan Kaufmann Series in Artificial Intelligence
Altri autori (Persone)	LevesqueHector J. <1951->
Disciplina	006.3/32
Soggetti	Knowledge representation (Information theory) Reasoning
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 349-375) and index.
Nota di contenuto	Front Cover; Knowledge Representation and Reasoning; Copyright Page; Contents; Preface; Acknowledgments; Chapter 1. Introduction; 1.1 The Key Concepts: Knowledge, Representation, and Reasoning; 1.2 Why Knowledge Representation and Reasoning?; 1.3 The Role of Logic; 1.4 Bibliographic Notes; 1.5 Exercises; Chapter 2. The Language of First-Order Logic; 2.1 Introduction; 2.2 The Syntax; 2.3 The Semantics; 2.4 The Pragmatics; 2.5 Explicit and Implicit Belief; 2.6 Bibliographic Notes; 2.7 Exercises; Chapter 3. Expressing Knowledge; 3.1 Knowledge Engineering; 3.2 Vocabulary; 3.3 Basic Facts 3.4 Complex Facts 3.5 Terminological Facts; 3.6 Entailments; 3.7 Abstract Individuals; 3.8 Other Sorts of Facts; 3.9 Bibliographic Notes; 3.10 Exercises; Chapter 4. Resolution; 4.1 The Propositional Case; 4.2 Handling Variables and Quantifiers; 4.3 Dealing with Computational Intractability; 4.4 Bibliographic Notes; 4.5 Exercises; Chapter 5. Reasoning with Horn Clauses; 5.1 Horn Clauses; 5.2 SLD Resolution; 5.3 Computing SLD Derivations; 5.4 Bibliographic Notes; 5.5 Exercises; Chapter 6. Procedural Control of Reasoning; 6.1 Facts and Rules; 6.2 Rule Formation and Search Strategy 6.3 Algorithm Design 6.4 Specifying Goal Order; 6.5 Committing to Proof Methods; 6.6 Controlling Backtracking; 6.7 Negation as Failure; 6.8 Dynamic Databases; 6.9 Bibliographic Notes; 6.10 Exercises;

Chapter 7. Rules in Production Systems; 7.1 Production Systems: Basic Operation; 7.2 Working Memory; 7.3 Production Rules; 7.4 A First Example; 7.5 A Second Example; 7.6 Conflict Resolution; 7.7 Making Production Systems More Efficient; 7.8 Applications and Advantages; 7.9 Some Significant Production Rule Systems; 7.10 Bibliographic Notes; 7.11 Exercises; Chapter 8. Object-Oriented Representation 8.1 Objects and Frames8.2 A Basic Frame Formalism; 8.3 An Example: Using Frames to Plan a Trip; 8.4 Beyond the Basics; 8.5 Bibliographic Notes; 8.6 Exercises; Chapter 9. Structured Descriptions; 9.1 Descriptions; 9.2 A Description Language; 9.3 Meaning and Entailment; 9.4 Computing Entailments; 9.5 Taxonomies and Classification; 9.6 Beyond the Basics; 9.7 Bibliographic Notes; 9.8 Exercises; Chapter 10. Inheritance; 10.1 Inheritance Networks; 10.2 Strategies for Defeasible Inheritance; 10.3 A Formal Account of Inheritance Networks; 10.4 Bibliographic Notes; 10.5 Exercises; Chapter 11. Defaults 11.1 Introduction11.2 Closed-World Reasoning; 11.3 Circumscription; 11.4 Default Logic; 11.5 Autoepistemic Logic; 11.6 Conclusion; 11.7 Bibliographic Notes; 11.8 Exercises; Chapter 12. Vagueness, Uncertainty, and Degrees of Belief; 12.1 Noncategorical Reasoning; 12.2 Objective Probability; 12.3 Subjective Probability; 12.4 Vagueness; 12.5 Bibliographic Notes; 12.6 Exercises; Chapter 13. Explanation and Diagnosis; 13.1 Diagnosis; 13.2 Explanation; 13.3 A Circuit Example; 13.4 Beyond the Basics; 13.5 Bibliographic Notes; 13.6 Exercises; Chapter 14. Actions; 14.1 The Situation Calculus 14.2 A Simple Solution to the Frame Problem

Sommario/riassunto

Knowledge representation is at the very core of a radical idea for understanding intelligence. Instead of trying to understand or build brains from the bottom up, its goal is to understand and build intelligent behavior from the top down, putting the focus on what an agent needs to know in order to behave intelligently, how this knowledge can be represented symbolically, and how automated reasoning procedures can make this knowledge available as needed. This landmark text takes the central concepts of knowledge representation developed over the last 50 years and illustrates them in a l
