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| Nota di contenuto              | Front Cover; Knowledge Representation and Reasoning; Copyright<br>Page; Contents; Preface; Acknowledgments; Chapter 1. Introduction;<br>1.1 The Key Concepts: Knowledge, Representation, and Reasoning; 1.2<br>Why Knowledge Representation and Reasoning?; 1.3 The Role of Logic;<br>1.4 Bibliographic Notes; 1.5 Exercises; Chapter 2. The Language of<br>First-Order Logic; 2.1 Introduction; 2.2 The Syntax; 2.3 The Semantics;<br>2.4 The Pragmatics; 2.5 Explicit and Implicit Belief; 2.6 Bibliographic<br>Notes; 2.7 Exercises; Chapter 3. Expressing Knowledge; 3.1 Knowledge<br>Engineering; 3.2 Vocabulary; 3.3 Basic Facts<br>3.4 Complex Facts3.5 Terminological Facts; 3.6 Entailments; 3.7<br>Abstract Individuals; 3.8 Other Sorts of Facts; 3.9 Bibliographic Notes;<br>3.10 Exercises; Chapter 4. Resolution; 4.1 The Propositional Case; 4.2<br>Handling Variables and Quantifiers; 4.3 Dealing with Computational<br>Intractability; 4.4 Bibliographic Notes; 4.5 Exercises; Chapter 5.<br>Reasoning with Horn Clauses; 5.1 Horn Clauses; 5.2 SLD Resolution;<br>5.3 Computing SLD Derivations; 5.4 Bibliographic Notes; 5.5 Exercises;<br>Chapter 6. Procedural Control of Reasoning; 6.1 Facts and Rules; 6.2<br>Rule Formation and Search Strategy<br>6.3 Algorithm Design6.4 Specifying Goal Order; 6.5 Committing to<br>Proof Methods; 6.6 Controlling Backtracking; 6.7 Negation as Failure;<br>6.8 Dynamic Databases; 6.9 Bibliographic Notes; 6.10 Exercises; |

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|                    | Chapter 7. Rules in Production Systems; 7.1 Production Systems: Basic<br>Operation; 7.2 Working Memory; 7.3 Production Rules; 7.4 A First<br>Example; 7.5 A Second Example; 7.6 Conflict Resolution; 7.7 Making<br>Production Systems More Efficient; 7.8 Applications and Advantages;<br>7.9 Some Significant Production Rule Systems; 7.10 Bibliographic<br>Notes; 7.11 Exercises; Chapter 8. Object-Oriented Representation<br>8.1 Objects and Frames8.2 A Basic Frame Formalism; 8.3 An Example:<br>Using Frames to Plan a Trip; 8.4 Beyond the Basics; 8.5 Bibliographic<br>Notes; 8.6 Exercises; Chapter 9. Structured Descriptions; 9.1<br>Descriptions; 9.2 A Description Language; 9.3 Meaning and Entailment;<br>9.4 Computing Entailments; 9.5 Taxonomies and Classification; 9.6<br>Beyond the Basics; 9.7 Bibliographic Notes; 9.8 Exercises; Chapter 10.<br>Inheritance; 10.1 Inheritance Networks; 10.2 Strategies for Defeasible<br>Inheritance; 10.3 A Formal Account of Inheritance Networks; 10.4<br>Bibliographic Notes; 11.5 Autoepistemic Logic; 11.6 Conclusion; 11.7<br>Bibliographic Notes; 11.8 Exercises; Chapter 12. Vagueness,<br>Uncertainty, and Degrees of Belief; 12.1 Noncategorical Reasoning;<br>12.2 Objective Probability; 12.3 Subjective Probability; 12.4 Vagueness;<br>12.5 Bibliographic Notes; 13.5 Explanation; 13.3 A Circuit Example;<br>13.4 Beyond the Basics; 13.5 Bibliographic Notes; 13.6 Exercises;<br>Chapter 14. Actions; 14.1 The Situation Calculus<br>14.2 A Simple Solution to the Frame Problem |
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| Sommario/riassunto | Knowledge representation is at the very core of a radical idea for<br>understanding intelligence. Instead of trying to understand or build<br>brains from the bottom up, its goal is to understand and build<br>intelligent behavior from the top down, putting the focus on what an<br>agent needs to know in order to behave intelligently, how this<br>knowledge can be represented symbolically, and how automated<br>reasoning procedures can make this knowledge available as needed.<br>This landmark text takes the central concepts of knowledge<br>representation developed over the last 50 years and illustrates them in<br>a l  |