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Nota di contenuto	Front Cover; Fuzzy Modeling and Genetic Algorithms for Data Mining and Exploration; Copyright Page; Contents; Preface; Objectives and Audience; Organization of the Book; Algorithm Definitions and Examples; Acknowledgments; Introduction; The Modern Connected World; The Advent of Intelligent Models; Fuzzy Logic and Genetic Algorithms; Part I: Concepts and Issues; Chapter 1. Foundations and Ideas; 1.1 Enterprise Applications and Analysis Models; 1.2 Distributed and Centralized Repositories; 1.3 The Age of Distributed Knowledge; 1.4 Information and Knowledge Discovery 1.5 Data Mining and Business Models 1.6 Fuzzy Systems for Business Process Models; 1.7 Evolving Distributed Fuzzy Models; 1.8 A Sample Case: Evolving a Model for Customer Segmentation; 1.9 Review; Chapter 2. Principal Model Types; 2.1 Model and Event State Categorization; 2.2 Model Type and Outcome Categorization; 2.3 Review; Chapter 3. Approaches to Model Building; 3.1 Ordinary Statistics; 3.2 Nonparametric Statistics; 3.3 Linear Regression in Statistical Models; 3.4 Nonlinear Growth Curve Fitting; 3.5 Cluster Analysis; 3.6 Decision Trees and Classifiers; 3.7 Neural Networks 3.8 Fuzzy SQL Systems 3.9 Rule Induction and Dynamic Fuzzy Models;

3.10 Review; Further Reading; Part II: Fuzzy Systems; Chapter 4. Fundamental Concepts of Fuzzy Logic; 4.1 The Vocabulary of Fuzzy Logic; 4.2 Boolean (Crisp) Sets: The Law of Bivalence; 4.3 Fuzzy Sets; 4.4 Review; Chapter 5. Fundamental Concepts of Fuzzy Systems; 5.1 The Vocabulary of Fuzzy Systems; 5.2 Fuzzy Rule-based Systems: An Overview; 5.3 Variable Decomposition into Fuzzy Sets; 5.4 A Fuzzy Knowledge Base: The Details; 5.5 The Fuzzy Inference Engine; 5.6 Inference Engine Approaches; 5.7 Running a Fuzzy Model; 5.8 Review Chapter 6. Fuzzy SQL and Intelligent Queries 6.1 The Vocabulary of Relational Databases and Queries; 6.2 Basic Relational Database Concepts; 6.3 Structured Query Language Fundamentals; 6.4 Precision and Accuracy; 6.5 Why We Search Databases; 6.6 Expanding the Query Scope; 6.7 Fuzzy Query Fundamentals; 6.8 Measuring Query Compatibility; 6.9 Complex Query Compatibility Metrics; 6.10 Compatibility Threshold Management; 6.11 Fuzzy SQL Process Flow; 6.12 Fuzzy SQL Example; 6.13 Evaluating Fuzzy SQL Outcomes; 6.14 Review; Chapter 7. Fuzzy Clustering; 7.1 The Vocabulary of Fuzzy Clustering 7.2 Principles of Cluster Detection 7.3 Some General Clustering Concepts; 7.4 Crisp Clustering Techniques; 7.5 Fuzzy Clustering Concepts; 7.6 Fuzzy c-Means Clustering; 7.7 Fuzzy Adaptive Clustering; 7.8 Generating Rule Prototypes; 7.9 Review; Chapter 8. Fuzzy Rule Induction; 8.1 The Vocabulary of Rule Induction; 8.2 Rule Induction and Fuzzy Models; 8.3 The Rule Induction Algorithm; 8.4 The Model Building Methodology; 8.5 A Rule Induction and Model Building Example; 8.6 Measuring Model Robustness; 8.7 Technical Implementation; 8.8 External Controls; 8.9 Organization of the Knowledge Base 8.10 Review

Sommario/riassunto

Fuzzy Modeling and Genetic Algorithms for Data Mining and Exploration is a handbook for analysts, engineers, and managers involved in developing data mining models in business and government. As you'll discover, fuzzy systems are extraordinarily valuable tools for representing and manipulating all kinds of data, and genetic algorithms and evolutionary programming techniques drawn from biology provide the most effective means for designing and tuning these systems. You don't need a background in fuzzy modeling or genetic algorithms to benefit, for this book provides it, along with
