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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Foundations of Semantic Web Reasoning -- Composing Frameworks and Components for Families of Semantic Web Applications -- Semantic Web Logic Programming Tools -- Web Rules Need Two Kinds of Negation -- Reasoning in Practice -- Towards the Adaptive Semantic Web -- On Reasoning on Time and Location on the Web -- Reasoning about Communicating Agents in the Semantic Web -- Query and Rule-

Languages -- A Visual Language for Web Querying and Reasoning -- XML Document Adaptation Queries (XDAQ): An Approach to Adaptation Reasoning Using Web Query Languages -- On Types for XML Query Language Xcerpt -- Integrating Description Logics and Answer Set Programming -- Semantics and Knowledge Representation -- Extracting Mathematical Semantics from Documents -- Reasoning in Attempto Controlled English -- Systematics and Architecture for a Resource Representing Knowledge about Named Entities.

Sommario/riassunto

The Semantic Web is a major endeavor aimed at enriching the existing Web with metadata and processing methods so as to provide Web-based systems with advanced (so-called intelligent) capabilities, in particular with context-awareness and decision support. The advanced capabilities striven for in most Semantic Web application scenarios primarily call for reasoning. Reasoning capabilities are offered by existing Semantic Web languages, such as BPEL4WS, BPML, ConsVISor, DAML-S, JTP, TRIPLE, and others. These languages, however, were developed mostly from functionality-centered (e.g., ontology reasoning or access validation) or application-centered (e.g., Web service retrieval and composition) perspectives. A perspective centered on the reasoning techniques (e.g., forward or backward chaining, tableau-like methods, constraint reasoning, etc.) complementing the above-mentioned activities appears desirable for Semantic Web systems and applications. The workshop on "Principles and Practice of Semantic Web Reasoning," which took place on December 8, 2003, in Mumbai, India, was the first of a series of scientific meetings devoted to such a perspective.

Just as the current Web is inherently heterogeneous in data formats and data semantics, the Semantic Web will be inherently heterogeneous in its reasoning forms. Indeed, any single form of reasoning turns out to be unrealistic in the Semantic Web. For example, ontology reasoning in general relies on monotonic negation (for the metadata often can be fully specified), while databases, Web databases, and Web-based information systems call for non-monotonic reasoning (for one would not specify non-existing trains in a railway timetable); constraint reasoning is needed when dealing with time (for time intervals have to be dealt with), while (forward and/or backward) chaining is the reasoning of choice when coping with database-like views (for views, i.e., virtual data, can be derived from actual data using operations such as join and projections).
