

Preface

The Semantic Web is characterized by the existence of a very large number of distributed semantic resources, which subscribe to alternative but often overlapping modelling schema (i.e. ontologies). Together these resources define a *network of ontologies*. This emerging scenario is radically different from the relatively narrow contexts in which ontologies have been traditionally developed and applied. Thus, there is a need for new practical methodologies and technologies to support effectively the development of a new kind of network-oriented semantic applications. This new support should assist a variety of users, dealing with a variety of ontology engineering tasks.

To address this methodological need, this book describes the *NeOn Methodology Framework*, which includes a set of nine scenarios for collaboratively building ontologies and ontology networks, a glossary of processes and activities potentially involved in ontology development and a collection of ontology life cycle models. Other important aspects of this framework include (a) a pattern-based design approach and (b) the provision of various models which can be used to represent information about ontology networks. In addition, the framework provides a set of methodological guidelines for the different processes and activities relevant to the development of networked ontologies. These guidelines are presented in a prescriptive way to facilitate their adoption by students and practitioners. The guidelines are supported by a comprehensive software environment, which provides effective and integrated support for all the processes and activities described in the book. Hence, the book also includes (a) an overview of the NeOn Toolkit, focusing in particular on the user interaction side, and (b) a detailed description of several plugins, which are most critical to the ontology development process.

Finally, the book shows how the NeOn methods and tools have been applied in three real-world case studies in the fishery and pharmaceutical domains. These descriptions reveal effectively the value of the proposed methods and tools.

This book aims to be a self-contained compendium of material for students and practitioners in ontology engineering. We aim to provide the necessary level of detail to allow readers to adopt the proposed methods and tools in practical ontology engineering projects. This book can be used as a textbook for undergraduate and postgraduate courses on ontology engineering, together with other books which focus specifically on the use of OWL for ontology engineering.

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