Ontology Alignment: Bridging the Semantic Gap, Marc Ehrig. Many information systems use a variety of individual schemas to represent data. Semantically linking these schemas is a necessary precondition to establishing interoperability between agents and services. Consequently, ontology alignment and mapping for data integration have become central to building the worldwide Semantic Web.

This book introduces novel methods and approaches for semantic integration. In addition to developing new methods for ontology alignment, the author provides extensive explanations of up-to-date case studies. The topic of this book, coupled with its application-focused methodology, will appeal to professionals from several different domains.

Designed for practitioners and researchers in industry, the book is also suitable for advanced-level students in computer science and electrical engineering.

Springer; www.springer.com; 0-387-32805-x; 248 pp.

Processing: Creative Coding and Computational Art, Ira Greenberg. A revolutionary open source programming language and environment designed to bridge the gap between programming and art, Processing lets nonprogrammers learn programming fundamentals easily so that they can produce beautiful creations using math patterns. Freely available software (http://processing.org), the Processing language provides an accessible alternative to using Flash for creative coding and computational art both on and off the Web.

This book is written especially for artists, designers, and other creative professionals and students exploring code art, graphics programming, and computational aesthetics. It provides a solid and comprehensive foundation in programming, including object-oriented principles, then shows how to use Processing to code lines, curves, shapes, and motion. The final chapter shows how to extend Processing skills by working directly with Java—the language Processing itself is built with.


Semantic Web: Concepts, Technologies, and Applications, Karin K. Breitman, Marco Antonio Casanova, and Walter Truszczkowski. The Web is growing at an astounding pace, surpassing the 8-billion page mark. However, most pages are still designed for human consumption and cannot be processed by machines.

This book provides a well-paced introduction to the Semantic Web. It covers a wide range of topics, including, new trends such as ontologies and rules, existing technologies such as Web services and software agents, and formal aspects such as logic and inference. The authors provide complete, real-world examples of the application of Semantic Web concepts and show how the technology presented and discussed throughout the book can be extended to other application areas.


Use Case Driven Object Modeling with UML—Theory and Practice, Doug Rosenberg and Matt Stephens. This book shows how to drive an object-oriented software design from use cases all the way through coding and testing, based on the minimalist, UML-based ICONIX process. In addition to a comprehensive explanation of the approach’s foundations, the book makes extensive use of examples and provides exercises at the back of each chapter.

Leading by example, this book demonstrates common analysis and design errors, shows how to detect and fix them, and suggests how to avoid making the same errors in the future. The book also encourages readers to examine its UML examples and to search for specific errors. Readers get clues, then later receive the answers during “review sessions” toward the end of the book.


Distributed Systems: An Algorithmic Approach, Sukumar Ghosh. Most applications in distributed computing center around a set of common subproblems. This book presents the algorithmic issues and background theory needed to properly understand these challenges.

Achieving a balance between theory and practice, the author bridges the gap between theoreticians and practitioners. With a set of exercises featured in each chapter, the book begins with background information that contains various interprocess communication techniques and middleware services, followed by foundational topics that cover system models, correctness criteria, and proof techniques. The book also presents numerous important paradigms in distributed systems, including logical clocks, distributed snapshots, deadlock detection, termination detection, election, and several graph algorithms.

The author addresses failures and fault-tolerance techniques in diverse applications, such as consensus, transactions, group communication, replicated data management, and self-stabilization. He concludes with an exploration of real-world issues, including distributed discrete-event simulation and security, sensor networks, and peer-to-peer networks.

By covering foundational matters of distributed systems and their relationships to real-world applications, this book provides insight into common distributed computing subproblems.


Send book announcements to newbooks@computer.org.