**Computer Animation: Algorithms and Techniques, 2nd ed.,** Rick Parent. Driven by the demands of research and the entertainment industry, the techniques of animation have been pushed to render increasingly complex objects with ever more lifelike appearance and motion. Developers must maintain their understanding of conceptual foundations as their animation tools become more complex and specialized.

This second edition provides a resource for designers who must meet this challenge, focusing on the many recent developments in animation technology, including fluid, human figure, and soft body animation. The new edition revises and expands coverage of topics such as quaternions, natural phenomena, facial animation, and inverse kinematics. The book includes up-to-date discussions of Maya scripting and the Maya C++ API, programming on real-time 3D graphics hardware, collision detection, motion capture, and motion capture data processing.

Morgan Kaufmann; www.elsevierdirect.com; 978-0-12-532000-9; 624 pp.

**Beginning Database-Driven Application Development in Java EE: Using GlassFish,** Yuli Vasiliev. This book focuses on the open source GlassFish persistence engine, showing Java programmers how to develop applications using relational database technologies with examples from Oracle, MySQL, and the GlassFish application development framework. It explains in detail how to organize a Java EE solution into a multilayer architecture, placing most emphasis on how to implement an application’s persistence and database tiers.

The book also explains how to deploy Java EE applications to GlassFish, a free, open source Java EE 5–compliant application server.


**Real-Time Systems: Formal Specification and Automatic Verification,** Ernst-Rüdiger Olderog, Carl V. Ossietzky, and Henning Dierks. Real-time systems must react to certain input stimuli within given bounds. For example, an airbag in a car must unfold within 300 milliseconds during a crash. There are many embedded safety-critical applications, and each requires real-time specification techniques.

This text introduces three of these techniques, based on logic and automata: duration calculus, timed automata, and PLC-automata. The techniques are brought together to form a seamless design flow, from real-time requirements specified in the duration calculus through designs specified by PLC-automata, and into source code for embedded systems’ hardware platforms. The authors also introduce specification techniques’ syntax, semantics, and proof methods while establishing their most important properties, with real-life examples illustrating their use. Detailed case studies and exercises conclude each chapter.


**The Semantic Web: Semantics for Data and Services on the Web,** Vipul Kashyap, Christoph Bussler, and Matthew Moran. The Semantic Web envisions having data on the Web defined and linked so that it can be used by machines not just for display purposes but for automation, integration, and reuse of data across various applications.

The authors seek to dispel the notion that the Semantic Web primarily rehashes existing AI and database work. They do so by presenting the broad dimensions of this emerging area and its multidisciplinary technological underpinnings, such as machine learning, information retrieval, service-oriented architectures, and grid computing, which combined help realize the full potential of the Semantic Web vision.

Throughout the book, the use case of a clinical vignette serves to motivate and explain solutions based on Semantic Web technologies.

Springer; www.springer.com; 978-3-540-76451-9; 414 pp.

**Biological Modeling and Simulation: A Survey of Practical Models, Algorithms, and Numerical Methods,** Russell Schwartz. To date, comparatively little attention has been given to training aspiring computational biologists in handling new and unanticipated problems. This text fills that gap by teaching students how to reason about developing formal mathematical models of biological systems that are amenable to computational analysis. It collects a selection of broadly useful models, algorithms, and theoretical analysis tools normally found scattered among many other disciplines and applies them to helping students tackle modeling problems drawn from many biology subfields.

The text covers models for optimization, simulation and sampling, and parameter tuning. These topics provide a general framework for learning how to formulate mathematical models of biological systems, the techniques available to work with these models, and how to fit the models to particular systems. Many examples drawn from a variety of biological disciplines and several extended case studies show how the methods described have been applied to real problems in biology.

MIT Press; mitpress.mit.edu; 0-262-19584-4; 408 pp.

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