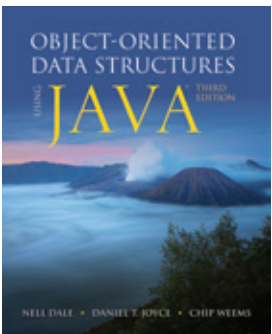
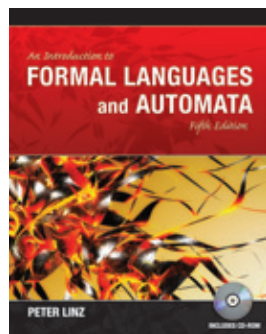
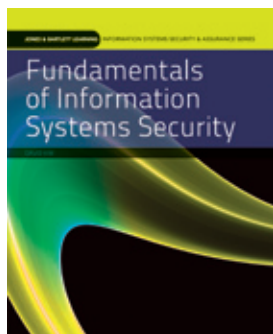
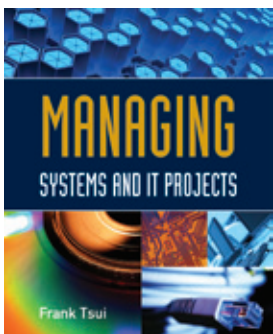
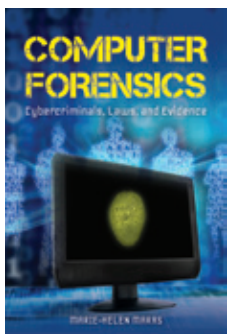
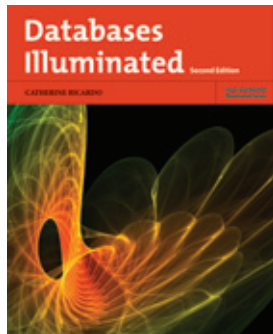
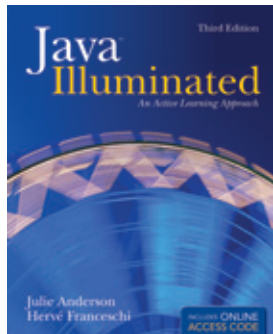
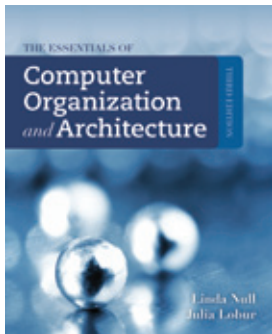


COMPUTER SCIENCE

ACADEMIC CATALOG **2011**



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A Note about Student and Instructor Resources

Many of our textbooks are accompanied by print and online instructor and student resources. Wherever these resources are available, they are noted as follows:

Instructor Resources:

AE = Answers to Exercises
AR = Additional Resources
CL = CodeLab
IM = Instructors Manual
SC = Source Code
PP = PowerPoint
SM = Solutions Manual
TB = Test Bank

Student Resources:

CD = CD-ROM
CL = CodeLab
CW = Companion Website
LE = Lab Exercises
LM = Lab Manual
SC = Source Code

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eBook—Jones & Bartlett Learning is continually adding titles to Amazon's wireless eBook device and alternate Kindle mobile applications.

For more information on additional formats, visit us online at: www.jblearning.com

¹ iPad is available in compatibility mode. Not all mobile versions are available on all platforms. Please see individual catalog pages for specifications.

Computer Science Illuminated

Fourth Edition

Nell Dale, University of Texas, Austin
John Lewis, Virginia Tech

Revised and updated with the latest information in the field, the *Fourth Edition* of *Computer Science Illuminated* continues to engage and enlighten students on the fundamental concepts and diverse capabilities of computing. Written by two of today's most respected computer science educators, Nell Dale and John Lewis, the text provides a broad overview of the many aspects of the discipline from a generic viewpoint. Separate program language chapters are available as bundle items for those instructors who would like to explore a particular programming language with their students. The many layers of computing are thoroughly explained, beginning with the

information layer; working through the hardware, programming, operating systems, application, and communication layers; and ending with a discussion on the limitations of computing.

Key Features

- A reorganized Programming Layer (Chapters 6-9) helps students understand and retain key material.
- A New Student Companion Website, available as a bundle option, includes many student study aids as well as programming language chapters and lab exercises.
- Revised biographies detail the lives of computer science innovators.
- Includes new and revised ethical issues written by the authors and contributors.
- Major new sections on social networking and gaming pique students interest by delving into this growing area of student interest.

ISBN-13: 978-0-7637-7646-6 • Paperback • 646 Pages • © 2011 • Additional Format: CourseSmart

+ Instructor Resources: PP, SM, TB

+ Student Resources: CW

Cost-saving bundling opportunities are available! Contact your Account Specialist at 1-800-832-0034 for more information.



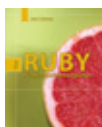
ISBN-13: 978-0-7637-6658-0
 Paperback • 95 Pages • © 2010



ISBN-13: 978-0-7637-4316-1
 Paperback • 59 Pages • © 2007



ISBN-13: 978-0-7637-6674-0
 Paperback • 76 Pages • © 2010



ISBN-13: 978-0-7637-5757-1
 Paperback • 46 Pages • © 2009

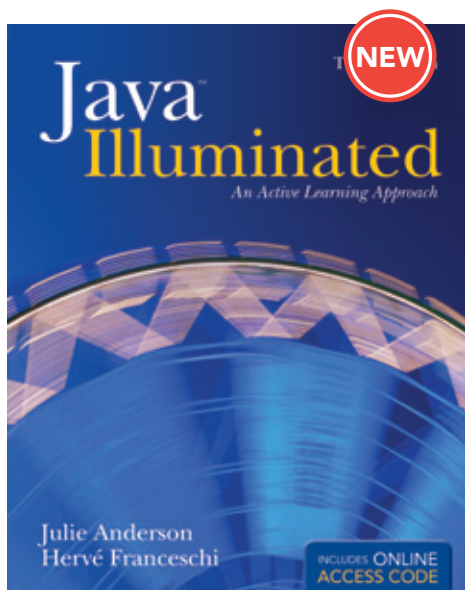


ISBN-13: 978-0-7637-5059-6
 Paperback • 60 Pages • © 2008



ISBN-13: 978-0-7637-5758-8
 Paperback • 52 Pages • © 2009

Chapters are also available in C++, Java, Visual Basic, and Pascal!



Java Illuminated

An Active Learning Approach
Third Edition

Julie Anderson, Capitol College
Hervé Franceschi, Capitol College

This revised and updated *Third Edition* provides a comprehensive introduction to programming using the most current version of Java. This comprehensive edition is designed for the two- to three-term introductory course in Java programming and incorporates an “active learning approach,” that asks students to take an active role in their understanding of the language through the use of numerous interactive examples, exercises, and projects.

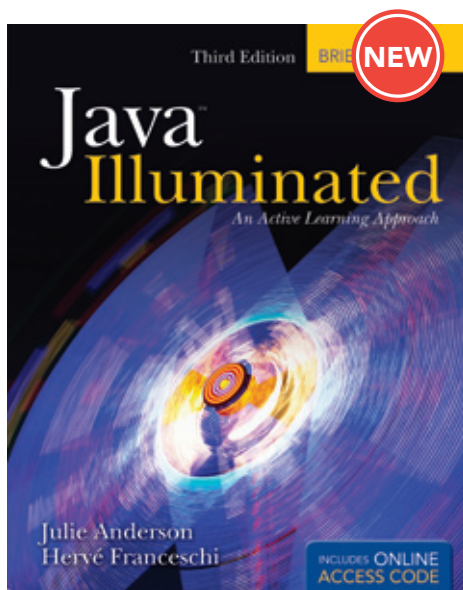
Key Features

- Every NEW copy of the text includes a CD-ROM containing programming activity framework code, full example code from each chapter, browser-based modules with visual step-by-step demonstrations of code execution, and links to popular integrated development environments and the Java Standard Edition JDK.
- Every new copy includes a **FREE ACCESS CARD for TuringsCraft CodeLab**. Customized to match the organization of this text, CodeLab provides over 300 short programming exercises! A Jones & Bartlett Learning demonstration site is available online at jblearning.turingscraft.com.

ISBN-13: 978-1-4496-3201-4

Paperback • 1296 Pages • © 2012

- ⊕ **Instructor Resources:** CL, PP, SM, TB
- ⊕ **Student Resources:** CD, CL



Java Illuminated

An Active Learning Approach
Brief Third Edition

Julie Anderson, Capitol College
Hervé Franceschi, Capitol College

This *Brief, Third Edition* is suitable for a one-term introductory course in Java programming and presents topics in a logical order. The “active learning approach” involves students in hands-on, programming activities and engaging examples, exercises, and projects. Object-Oriented programming concepts are developed progressively and reinforced through numerous Programming Activities, allowing students to fully understand and implement both basic and sophisticated techniques.

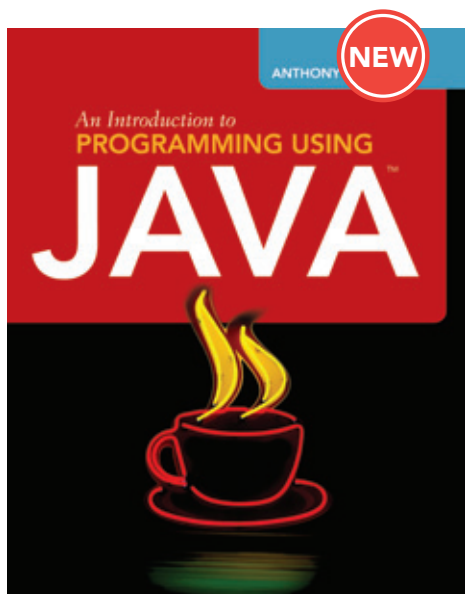
Key Features

- Includes a CD-ROM containing programming activity framework code, full example code from each chapter, browser-based modules with visual step-by-step demonstrations of code execution, and links to popular integrated development environments and the Java Standard Edition JDK.
- Every new copy includes a **FREE ACCESS CARD for TuringsCraft CodeLab**. Customized to match the organization of this text, CodeLab provides over 300 short programming exercises!

ISBN-13: 978-1-4496-3202-1

Paperback • 792 Pages • © 2012

- ⊕ **Instructor Resources:** CL, PP, SM, TB
- ⊕ **Student Resources:** CD, CL



An Introduction to Programming Using Java

Anthony J. Dos Reis,
State University of New York, New Paltz

Ideal for the introductory programming course, this text covers all recommended topics put forth by the ACM/IEEE curriculum guidelines in a concise format that is perfect for the one-term course. An integrated lab manual enhances the learning process by providing real-world, hands-on projects. This unique approach allows readers to test their understanding of the key material at hand. Sample exams urge readers to assess their progress through the course and are ideal study aids for in-class testing. The author's innovative, accessible approach engages and excites students on the capabilities of programming using Java!

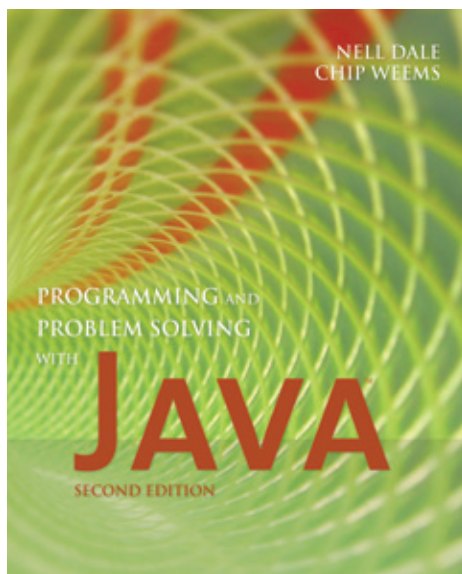
Key Features

- A built-in lab manual allows students hands-on work with real-world exercises.
- Covers all recommended topics put forth by the ACM-IEEE.
- The text incorporates unique approaches to present some of the more difficult concepts in Java.
- Sample exams in the text motivate students to study and assess their own learning.
- CodeLab access is available for adopting institutions

ISBN-13: 978-0-7637-9060-8

Paperback • 450 Pages • © 2012

- + **Instructor Resources:** AE, CL, IM, PP
- + **Student Resources:** CL, SC



Programming and Problem Solving with Java Second Edition

Nell Dale, University of Texas, Austin
Chip Weems, University of Massachusetts, Amherst

The new *Second Edition* of *Programming and Problem Solving with Java* continues to be the most student-friendly text available. Using Dale and Weems' highly effective "progressive objects" approach, students begin with very simple yet useful class design in parallel with the introduction of Java's basic data types, arithmetic operations, control structures, and file I/O. Later chapters focus on inheritance and polymorphism, using the firm foundation that has been established by steadily developing numerous classes in the early part of the text. A new chapter on Data Structures and Collections has been added making the text ideal for a one- or two-semester course.

Key Features

- Includes **Software Maintenance Case Studies**, a new feature that demonstrates how to read code in order to debug, alter, and/or enhance an existing class or code segment.
- GUI material is presented in an optional, parallel track.

ISBN-13: 978-0-7637-3402-2

Paperback • 838 Pages • © 2008

- + **Instructor Resources:** IM, PP, TB
- + **Student Resources:** CW, LM, SC



An Introduction to Programming with JavaScript

John David Dionisio
Ray Toal

Both from Loyola Marymount University

This text is ideal for readers who are looking to begin their careers in computing and start programming right from the start. The authors focus on the basics and functionality of JavaScript and computing in general, and discuss the future of computer science. A look into how computer science is used across many areas is also uncovered, from medicine, law, and business on to entertainment, education, and gaming. Case studies show readers real-world examples and their development from inception to final product.

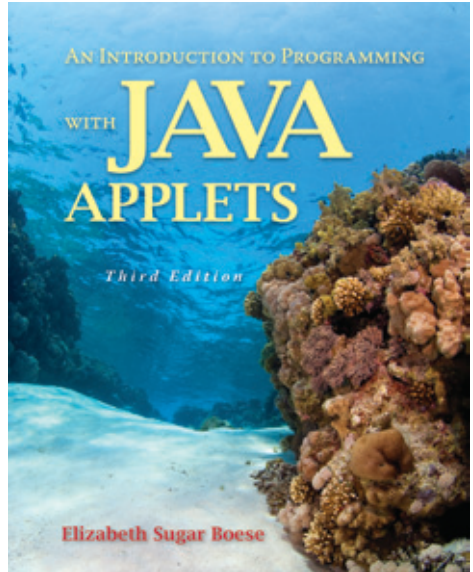
Contents

1. The Field of Computing
2. Programming
3. Data
4. Statements
5. Functions
6. Event-Driven Computing
7. Software Construction
8. Distributed Computing
9. Graphics and Animation
10. Advanced Topics

ISBN-13: 978-1-4496-8060-9

Paperback • 608 Pages • © 2012

+ **Instructor Resources:** PP, TB



An Introduction to Programming with Java Applets

Third Edition

Elizabeth Sugar Boese,
Colorado State University

This text provides a clear introduction to the art of programming for the one-term course. It prepares students with the tools they need to create sophisticated programs efficiently and with ease. The text assumes no prior programming knowledge, beginning with an introduction to computing, then gradually moving into programming, giving students the opportunity to create their own programs. It focuses on the essentials and places more detailed information in “Advanced Concept” sections for those who would like to delve deeper into particular concepts.

Key Features

- All examples use graphical Java applets which can be posted directly on the Internet.
- Includes a chapter on Game Programming, an exciting and engaging area of student interest.
- All material is based on the standard Java API, enabling users to understand examples from other sources without relying on custom libraries.

ISBN-13: 978-0-7637-5460-0

Paperback • 428 Pages • © 2010

Additional Format: CourseSmart

+ **Instructor Resources:** AR, PP, TB



A First Course in Programming Using Flash ActionScript 3.0

Richard Cornez

A First Course in Programming Using Flash ActionScript 3.0 provides a CS-1-level introduction to computer programming by employing interactive visual environments such as games and web pages. It explores applications that involve movement, sound, graphics, and interactivity using Flash ActionScript 3.0. This flash environment presents key object-oriented programming concepts that are relevant to the world of computers seen daily in multimedia-rich web pages, games, and applications.

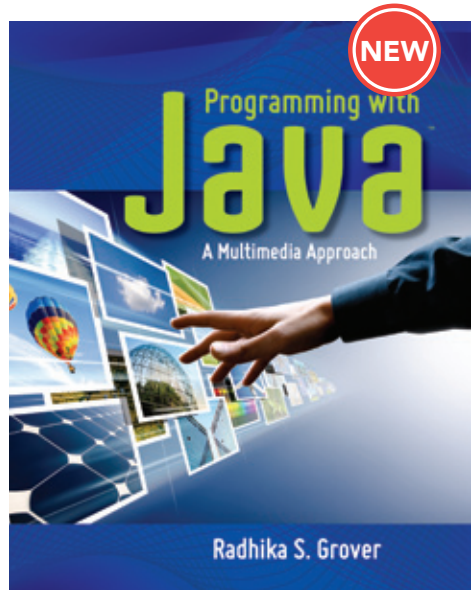
Key Features

- Examines and explores both the visual and programming side of Flash as it relates to ActionScript
- Satisfies the ACM guidelines for a first course in programming for a computer science curriculum (CS-1)
- Accompanied by a CD-ROM containing all the examples from the text
- Provides a concept-oriented approach, meaning that the concepts learned can be easily transferred to other languages such as Visual C++, Java, and C#

ISBN-13: 978-1-4496-0008-2

Paperback • 512 Pages • © 2013

⊕ Student Resources: CD



Programming with Java A Multimedia Approach

Radhika Grover

This 14-chapter introduction to programming with Java at the CS-1 level, uses multimedia-based programs as a means of instruction. Students will learn Java using programs that draw graphics and images, perform animation, read and play music files, display video, and more. This text uses clear explanations and illustrations, and does not require prior programming experience, knowledge of graphics, or other media API's.

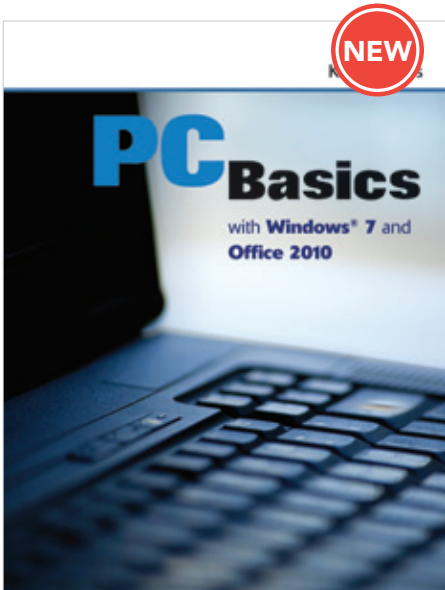
Key Features

- Provides numerous examples & illustrations that use multimedia to teach Java
- Does not require programming experience
- Students start writing multimedia programs in chapter 2
- Provides critical thinking questions & chapter exercises that contain both console-based & graphics-based programming problems.

ISBN-13: 978-1-4496-8433-1

Paperback • 640 Pages • © 2013

⊕ Instructor Resources: AE, PP, TB



PC Basics with Windows® 7 and Office 2010

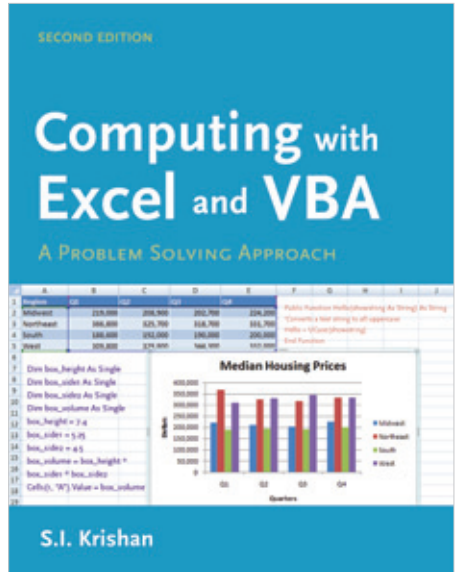
Kim Lindros

This text provides a complete survey of the computer technologies necessary for achieving basic technology literacy to ensure career success. It starts by providing a background needed to make smart buying decisions about computer technology. It then presents a description of the hardware that is the foundation of all of the technologies used every day, whether it's a laptop, personal computer, smartphone, or other digital device. The text then guides the reader through engaging, step-by-step tutorials on how to use the Windows 7 operating system and the popular Office 2010 productivity tools including Word, Excel, and PowerPoint.

Key Features

- Written in an easy-to-read, conversational and engaging style
- Provides Chapter Topics and Key Words at the beginning of each chapter so the student knows the key concepts to look for before reading the chapter
- Includes “Notes,” “Tips,” and “Warnings” in the margins to highlight important issues on the various topics discussed
- Includes end of chapter review questions and projects that allow the student to apply the skills learned

ISBN-13: 978-1-4496-2276-3
 Paperback • 318 Pages • © 2012



Computing with Excel® and VBA®

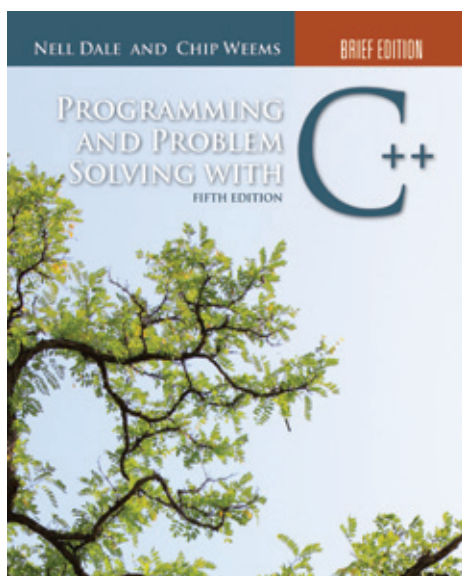
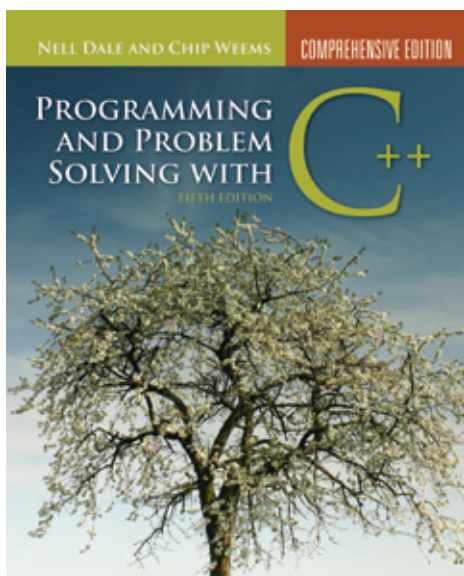
S.I. Krishan, Oakland University

Ideal for use in non-majors, introductory-level CS and CIS courses, this text provides students with a clear emphasis on problem solving using the popular tools Excel® and VBA®. Numerous examples are presented throughout the text to illustrate key concepts, and several additional examples and exercises are provided as learning tools at the end of each chapter. All examples relate to practical situations that students will likely encounter in their work or studies. By using Excel to demonstrate how computers can be used to solve problems, students will gain a solid skill set in this popular resource. The coverage of VBA provides exposition to programming with simple examples to show how Excel applications can be customized.

Key Features

- Basic computer concepts, like binary and hexadecimal number systems, logic gates, flow charts, and algorithms, are introduced through Excel and VBA exercises.
- Learning objectives provide a basic understanding of computer system components including information representation and logic gates.
- Online Instructor Solutions Manual available.

ISBN-13: 978-0-7637-5668-0
 Paperback • 298 Pages • © 2009
 + Instructor Resources: SM



Programming and Problem Solving with C++

Fifth Edition

Nell Dale, University of Texas, Austin
Chip Weems, University of Massachusetts, Amherst

Completely revised and updated with the latest version of C++, the new *Fifth Edition* provides the clearest introduction to C++, object-oriented programming, and software development available. Renowned author team Nell Dale and Chip Weems are careful to include all topics and guidelines put forth by the ACM/IEEE. A new chapter on Data Structures makes this text ideal for the one- or two-term course.

Key Features

- Provides the highly successful and student-friendly writing style that is a trademark for the Dale/Weems textbook series in computer science.
- A complete package of student and instructor ancillaries includes a student web site, lab manual, test items, PowerPoint presentations, and source code.
- **Software Maintenance Case Studies** are designed to teach strategies for reading, debugging, and maintaining existing code.

ISBN-13: 978-0-7637-7156-0

Paperback • 1020 Pages • © 2010

Additional Format: CourseSmart

⊕ **Instructor Resources:** PP, SC, SM, TB

⊕ **Student Resources:** CW, LM, SC

Programming and Problem Solving with C++

Brief Fifth Edition

Nell Dale, University of Texas, Austin
Chip Weems, University of Massachusetts, Amherst

Based off the highly successful Comprehensive Edition, this new *Brief Edition* is perfect for the one-term course. The text was motivated by the need for a text that covered only what instructors and students are able to move through in a single semester without sacrificing the breadth and detail necessary for the introductory programmer. The authors excite and engage students in the learning process with their accessible writing style, rich pedagogy, and relevant examples.

Key Features

- Designed for a one-term introduction to computer science and C++ programming.
- Proven pedagogical features include Problem Solving Case Studies; Testing and Debugging sections; special sections on Background Information, Theoretical Foundations, Software Engineering Tips, Matters of Style, and biographies of historical figures; Quick-Check Questions; Exam Preparation Exercises; Programming Problems; and Case Study Follow-Up Questions.

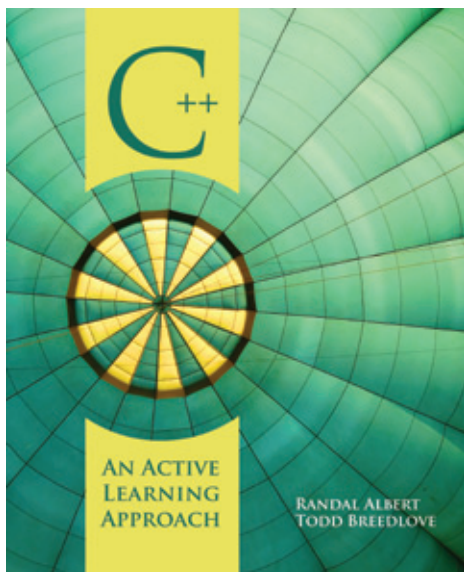
ISBN-13: 978-0-7637-7151-5

Paperback • 697 Pages • © 2010

Additional Format: CourseSmart

⊕ **Instructor Resources:** PP, SC, SM, TB

⊕ **Student Resources:** CW, LM, SC



C++

An Active Learning Approach

Todd W. Breedlove,
Oregon Institute of Technology
Randal L. Albert,
Oregon Institute of Technology

This text provides a hands-on introduction to the C++ language through active learning exercises and numerous programming projects. C++ is taught with an emphasis on procedural programming, beginning with an introduction to object-oriented programming. Ideal for the introductory programming course, this text includes the latest C++ upgrades without losing sight of the C underpinnings still required for all computing fields. With over 30 years of combined teaching experience, the authors understand the potential pitfalls students face and thus aim to keep the language simple, straightforward, and conversational.

Key Features

- At the end of many chapters, the corresponding C language constructs related to the specific topics presented in C++ are offered.
- Stresses a “learn-by-doing” philosophy throughout.
- A rich pedagogy offers numerous teaching and learning tools

ISBN-13: 978-0-7637-5723-6

Paperback • 653 Pages • © 2009

Additional Format: CourseSmart

⊕ **Instructor Resources:** AR, PP, SC

⊕ **Student Resources:** SC



Computing with C# and the .NET Framework

Second Edition

Arthur Gittleman,
California State University, Long Beach

Thoroughly revised and updated to incorporate Microsoft® Visual Studio® 2010, this *Second Edition* introduces object-oriented and event-driven programming with numerous examples, so students can grasp these difficult concepts and then apply them. Appropriate for the two-term CS1 and introductory C# programming courses, this text takes a spiral approach to teaching objects, starting with simple intuitive examples, then simple class design, and progressing to the more difficult aspects of inheritance and polymorphism. Similarly with events, the spiral approach is used to introduce simple paint event first, proceeding to user interfaces and event handlers.

Key Features

- Includes the new and relevant features of the C# language through version 4
- Chapter 12 (Data Structures) has been rewritten to use generic collections
- A new section has been added to introduce Language Integrated Query (LINQ)
- Contains a new appendix that provides examples showing how to use Visual Studio or Visual C# Express

ISBN-13: 978-1-4496-1550-5

Paperback • 756 Pages • © 2012

⊕ **Instructor Resources:** AE

⊕ **Student Resources:** AE, SC



Python Programming

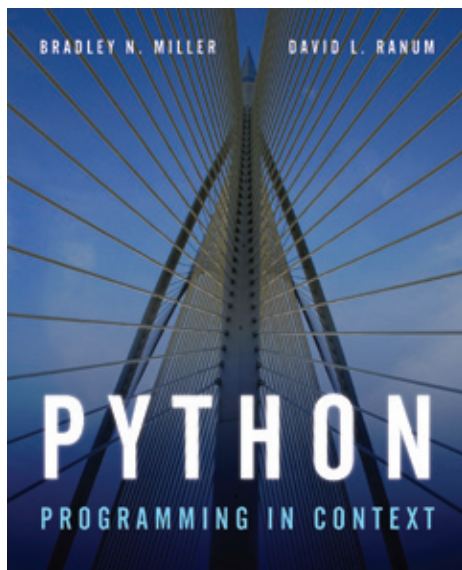
William Gunnells

This book is ideal for both the experienced programmer, or the absolute beginner looking for an introduction to the Python programming language. It quickly builds from beginner to intermediate, and introduces a few advanced topics such as web applications, GUI, network programming, threading, performance, games, generators, and an intro to programming paradigms for problem solving. When introducing new topics, the author carefully transitions by revisiting beginning aspects of programming. The complexity of the language gradually progresses, but its style for relating the concepts remains simple and easy to understand.

ISBN-13: 978-1-4496-1494-2

Hardcover • 512 Pages • © 2013

⊕ **Instructor Resources:** IM, PP



Python Programming in Context

Bradley N. Miller, Luther College

David L. Ranum, Luther College

Python Programming in Context is a clear, accessible introduction to the fundamental programming and problem solving concepts necessary for students at the introductory level. The authors carefully build upon the many important computer science concepts and problem solving techniques throughout the text and offer relevant, real-world examples and exercises to reinforce key material. Programming skills throughout the text are linked to applied areas such as Image Processing, Cryptography, Astronomy, Music, the Internet, and Bioinformatics, giving students a well-rounded look at its capabilities.

Key Features

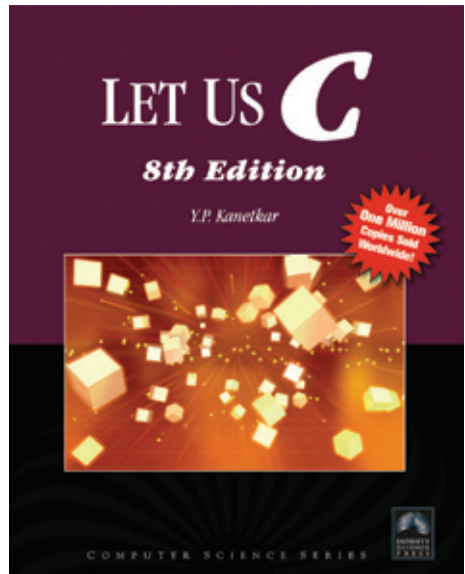
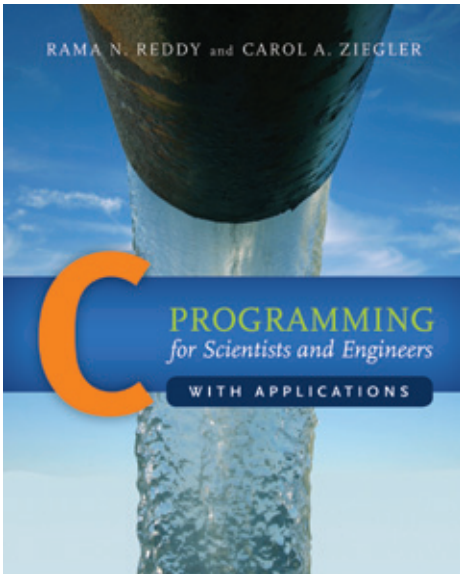
- Includes the latest version of Python, **Python 3.0!**
- Structured around problem solving rather than language features and therefore includes problems of general interest rather than a traditional language element structure.
- Provides a variety of coding exercises throughout.

ISBN-13: 978-0-7637-4602-5

Paperback • 492 Pages • © 2009

⊕ **Instructor Resources:** AR, SM

⊕ **Student Resources:** AR



C Programming for Scientists and Engineers with Applications

Rama Reddy, University of Arkansas
Carol Ziegler, University of Arkansas

This text guides readers through the fundamental, as well as the advanced concepts, of the C programming language as it applies to solving engineering and scientific problems. Ideal for readers with no prior programming experience, this text provides numerous sample problems and their solutions in the areas of mechanical engineering, electrical engineering, fluid mechanics, physics, chemistry, and more. It begins with a chapter focused on the basic terminology relating to hardware, software, problem definition, and solution. From there readers are quickly brought into the key elements of C and will be writing their own code upon completion of Chapter 2.

Key Features

- Complete solutions with documentation, code, input, and output are included.
- Pointers and dynamic pointers are presented in depth with sample code and end-of-chapter solutions.
- Critical thinking questions are included throughout.

ISBN-13: 978-0-7637-3952-2

Paperback • 838 Pages • © 2010

Additional Format: CourseSmart

⊕ **Instructor Resources:** IM, PP

⊕ **Student Resources:** SC

Let Us C Eighth Edition

Yashavant P. Kanetkar

Simplicity and an easy narration style are the hallmarks of this text, which have made its previous seven editions immensely successful. *Let Us C, Eighth Edition* covers important aspects of C programming and does not assume any programming background. It begins with the basics and steadily builds the pace, so the reader finds it easy to handle more complicated topics later. A CD-ROM with demos, code, compilers, executables, and MATLAB examples is included.

Key Features

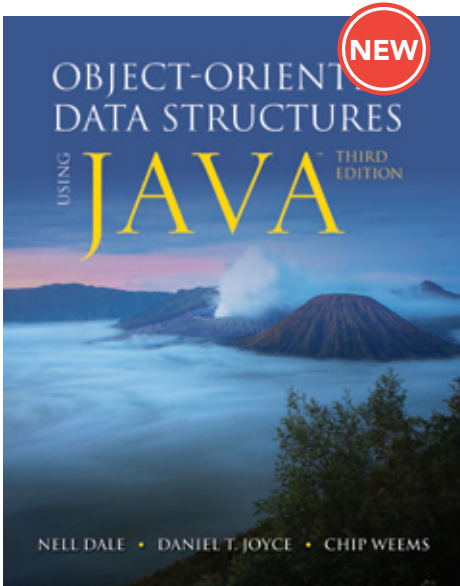
- Self-study format provides hundreds of step-by-step examples and exercises.
- Begins with the basics and progresses to more difficult topics.
- Covers the latest programming techniques for Windows®, Linux®, and the Internet.

ISBN-13: 978-1-9340-1525-4

Paperback • 593 Pages • © 2008

⊕ **Instructor Resources:** IM

⊕ **Student Resources:** CD



Object-Oriented Data Structures Using Java

Third Edition

Nell Dale, University of Texas, Austin
Daniel T. Joyce, Villanova University
Chip Weems, University of Massachusetts, Amherst

This updated and revised *Third Edition* is sure to be an essential resource for students learning data structures using the Java programming language. It presents traditional data structures and object-oriented topics with an emphasis on problem-solving, theory, and software engineering principles. Beginning early and continuing throughout the text, the authors introduce and expand upon the use of many Java features including packages, interfaces, abstract classes, inheritance, and exceptions. Numerous case studies provide readers with real-world examples and demonstrate possible solutions to interesting problems.

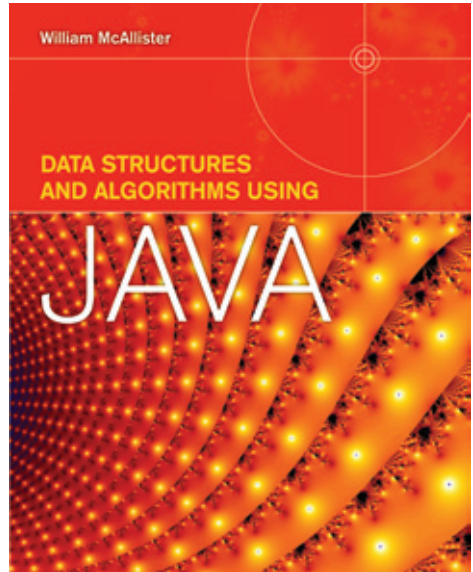
Key Features

- Introduces Java generics in Chapter 3 and expands upon their use throughout the text.
- Includes a new section on concurrency and synchronization
- Sections have been expanded or modified to increase clarity
- Includes additional code examples and programming exercises, including several project-type exercises

ISBN-13: 978-1-4496-1354-9

Hardcover • 805 Pages • © 2012

⊕ **Instructor Resources:** IM, PP, TB



Data Structures and Algorithms Using Java

William McAllister, St. Joseph's College

This outstanding text correlates to the recommended syllabus put forth by the ACM standard curriculum guidelines. The author has produced a resource that is more readable and instructional than any other, without compromising the scope of the ACM CS103 course material. The pedagogical features of the text, based on the author's 30 years of teaching experience, include succinct code examples, a unique common template used as the organizational basis of each chapter, the use of pseudocode to present the major algorithms developed in the text, nearly 300 carefully designed figures, and a concise review of Java.

Key Features

- Highly readable and engaging text.
- Expanded coverage of hashing.
- A unique approach to generics.
- Provides a methodized approach to recursion.
- Includes animation courseware.

ISBN-13: 978-0-7637-5756-4

Paperback • 580 Pages • © 2009

Additional Format: CourseSmart

⊕ **Instructor Resources:** AR, PP, SC, SM

⊕ **Student Resources:** AR, SC



C++ Plus Data Structures Fourth Edition

Nell Dale, University of Texas, Austin

Updated and reorganized, this *Fourth Edition* explores the specifications, applications, and implementations of abstract data types with unmatched accessibility. Written by renowned author and educator Nell Dale, this text provides intuitive explanations that clarify abstract concepts, and approaches the study of data structures with emphasis on computer science theory and software engineering principles. Topics such as modularization, data encapsulation, information hiding, object-oriented decomposition, algorithm analysis, life-cycle software verification models, and data abstraction are carefully presented to foster good software engineering techniques in students from the beginning of their careers.

Key Features

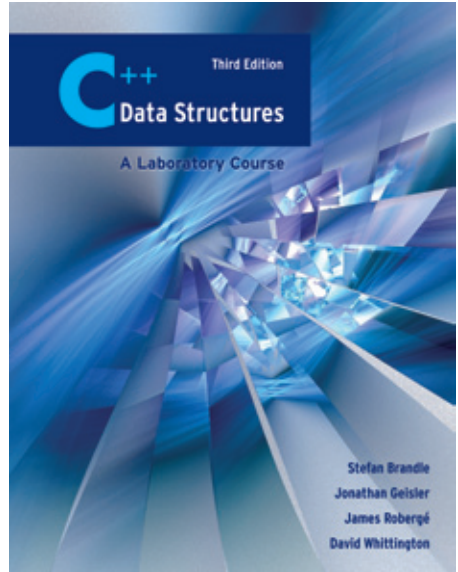
- Trademark Dale pedagogy including numerous large case studies. Each case study includes a description of the problem, an analysis of the problem input and required output, and a discussion of the appropriate data types to use.
- Each chapter contains an average of 35 exercises that span varying levels of difficulty.

ISBN-13: 978-0-7637-4158-7

Hardcover • 781 Pages • © 2007

⊕ **Instructor Resources:** AR, PP, SC, SM, TB

⊕ **Student Resources:** SC



C++ Data Structures A Laboratory Course Third Edition

Stefan Brandle, Taylor University, New York

James Robergé

Jonathan Geisler, Taylor University

David Whittington, Filtro Systems, Inc.

This text exemplifies the active learning experience. With a dynamic learn-by-doing focus, this laboratory manual encourages students to explore data structures by implementing them, a process through which students discover how data structures work and how they are applied. Providing a framework that offers feedback and support, this text challenges students to exercise their creativity in both programming and analysis.

Key Features

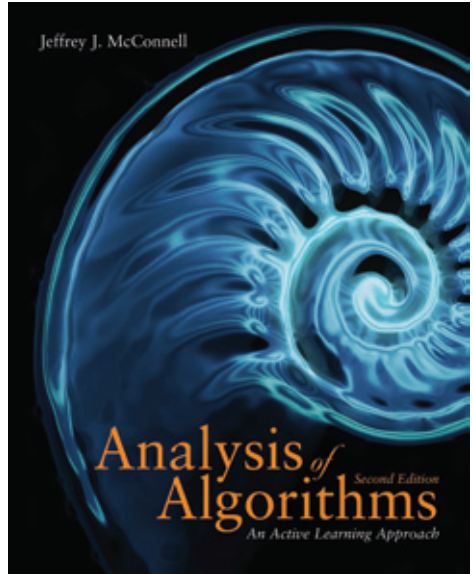
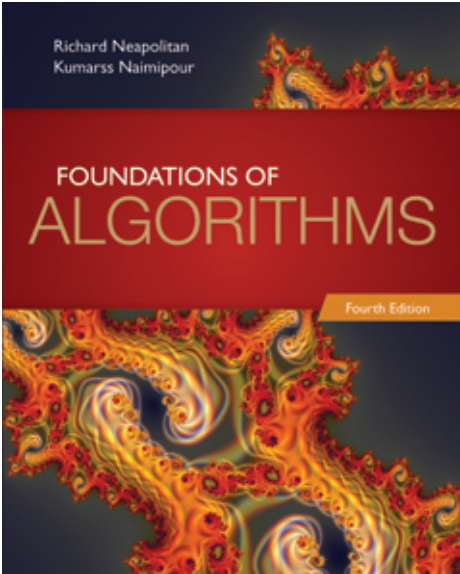
- All worksheet pages and appendix material are available online for instructors and students to utilize and print as needed.
- Each laboratory consists of three parts: basic implementation and testing, programming exercises, and analysis exercises.
- Labs have been reorganized to keep pace with most current textbooks.

ISBN-13: 978-0-7637-5564-5

Paperback • 173 Pages • © 2009

⊕ **Instructor Resources:** SC, SM

⊕ **Student Resources:** AR, SC



Foundations of Algorithms Fourth Edition

Richard Neapolitan,
Northeastern Illinois University
Kumarss Naimipour,
Northeastern Illinois University

The *Fourth Edition* offers a well-balanced presentation of algorithm design, complexity analysis of algorithms, and computational complexity. It is accessible to mainstream computer science students who have a background in college algebra and discrete structures. To support their approach, the authors present mathematical concepts using standard English and a simpler notation than is found in most texts. A review of essential mathematical concepts is presented in three appendices.

Contents

1. Algorithms: Efficiency, Analysis, and Order;
2. Divide-and-Conquer;
3. Dynamic Programming;
4. The Greedy Approach;
5. Backtracking;
6. Branch-and-Bound;
7. Introduction to Computational Complexity: The Sorting Problem;
8. More Computational Complexity: The Searching Problem;
9. Computational Complexity and Intractability: An Introduction to the Theory of NP;
10. Number-Theoretic Algorithms;
11. Introduction to Parallel Algorithms

ISBN-13: 978-0-7637-8250-4
Hardcover • 627 Pages • © 2011
Additional Format: CourseSmart

Analysis of Algorithms Second Edition

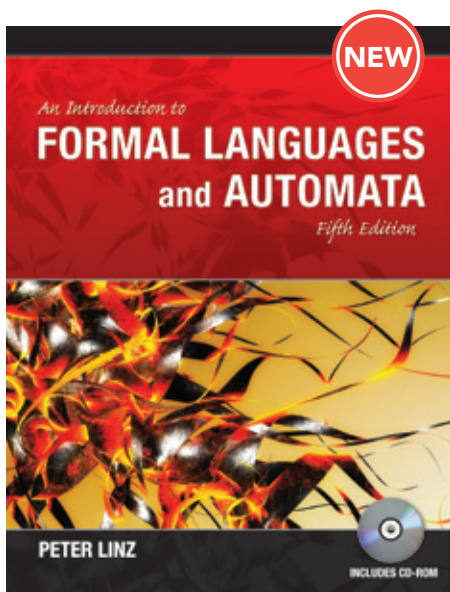
Jeffrey McConnell, Canisius College

Updated to follow the recommendations put forth by the ACM/SIGCSE 2001 task force, the *Second Edition* raises awareness of the effects that algorithms have on the efficiency of a program and develops the necessary skills to analyze general algorithms used in programs. The text presents the material with the expectation that it can be used with active and cooperative learning methodology, based on the premise that students learn more effectively and retain more information over longer periods of time when they are active participants in the learning process. To accomplish this, the chapters are clear, engaging, and complete, and are filled with exciting examples and exercises that look at the efficiency of various algorithms to solve a problem.

Key Features

- All algorithms are presented in pseudo-code that is understandable to anyone with knowledge of the concepts of conditional statements, loops, and recursion.
- A concise writing style that introduces the reader to the software design issues of space and time efficiency.
- Follows the latest ACM-IEEE curriculum recommendations.

ISBN-13: 978-0-7637-0782-8
Hardcover • 451 Pages • © 2008
Additional Format: CourseSmart
+ Instructor Resources: IM, PP



An Introduction to Formal Languages and Automata Fifth Edition

Peter Linz, University of California, Davis

This new *Fifth Edition* provides an accessible, student-friendly presentation of all material essential to an introductory Theory of Computation course. It is designed to familiarize students with the foundations of computer science and to strengthen the students' ability to carry out formal and rigorous mathematical arguments. Peter Linz continues to offer a straightforward, uncomplicated treatment of formal languages and automata and avoids excessive mathematical detail. The author has also added new illustrative examples and exercises.

Key Features

- Includes a new chapter within the appendices on finite-state transducers, including basic results on Mealy and Moore machines.
- Provides an introduction to JFLAP, also within the appendices.
- Accompanying CD-ROM contains a summary description of JFLAP, new exercises that illustrate the value and efficiency of JFLAP, and JFLAP implementations of most of the examples in the text.

ISBN-13: 978-1-4496-1552-9

Hardcover • 456 Pages • © 2012

⊕ **Instructor Resources:** IM, PP

⊕ **Student Resources:** CD



JFLAP

An Interactive Formal Languages and Automata Package

Susan H. Rodger, Duke University
Thomas W. Finley, Cornell University

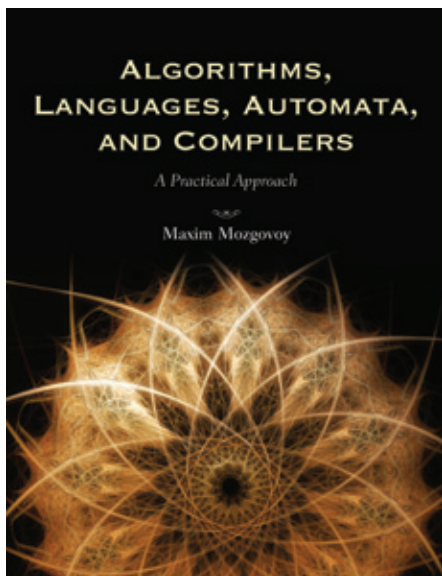
This resource is a hands-on supplemental guide through formal languages and automata theory. *JFLAP* guides students interactively through many of the concepts in an automata theory course or the early topics in a compiler course, including the descriptions of algorithms *JFLAP* has implemented. Students can experiment with the concepts in the text and receive immediate feedback when applying these concepts with the accompanying software. The text describes each area of *JFLAP* and reinforces concepts with end-of-chapter exercises. In addition to *JFLAP*, this guide incorporates two other automata theory tools into *JFLAP*: JellRap and Pate.

Key Features

- Offers an interactive, hands-on approach that helps students learn automata theory by experimenting and interacting with the concepts, and receiving immediate feedback.
- *JFLAP* allows users to create and operate on automata, grammars, L-systems, or regular-expression.
- Users can register and receive a free download of the *JFLAP* program online.

ISBN-13: 978-0-7637-3834-1

Paperback • 192 Pages • © 2006



Algorithms, Languages, Automata, & Compilers

A Practical Approach

Maxim Mozgovoy, University of Joensuu

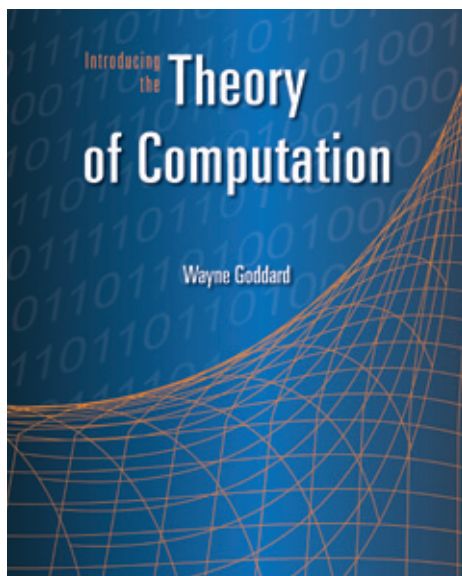
This text is designed to cover the standard “theory of computing” topics through a strong emphasis on practical applications rather than theorems and proofs. Finite automata, Turing machines, models of computation, complexity, solvability, and other topics that form a foundation of modern programming are discussed first with a gentle theoretical orientation, and then applied through programming code and practical examples. JFLAP projects and applications are integrated throughout the book, and C# is used for all code.

Contents

1. Regular Languages and Regular Expressions;
2. Finite Automata; 3. The Relationship Between Finite Automata and Regular Expressions;
4. Finite-State Machines in Practice;
5. Nonregular Languages and Context-Free Grammars; 6. Pushdown Automata;
7. Parsing; 8. Compiler Generation;
9. The Lindenmayer Systems (L-Systems);
10. Turing Machines; 11. Decidability and Complexity

ISBN-13: 978-0-7637-7627-5

Hardcover • 345 Pages • © 2010



Introducing the Theory of Computation

Wayne Goddard, Clemson University

Introducing the Theory of Computation is the ideal text for any undergraduate, introductory course on formal languages, automata, and computability. The author provides a concise, yet complete introduction to the important models of finite automata, grammars, and Turing machines, as well as undecidability and the basics of complexity theory. Numerous problems, varying in level of difficulty, round out each chapter and allow students to test themselves on key topics. Answers to selected exercises are included as an appendix and a complete instructor’s solutions manual is available on the text’s web site.

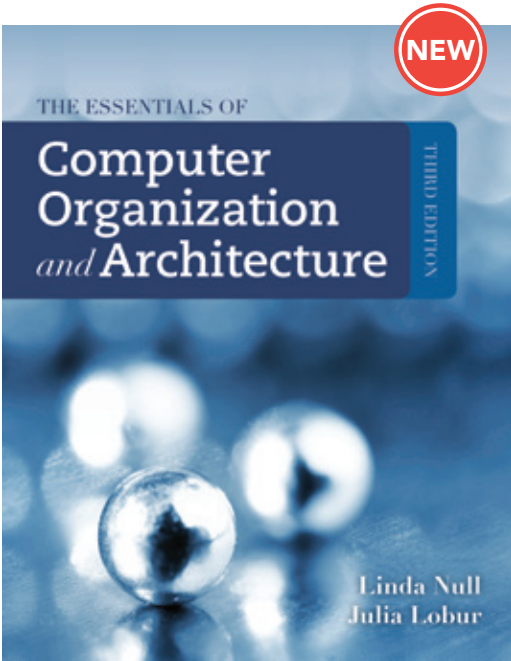
Contents

1. Finite Automata; 2. Regular Expressions;
3. Nondeterminism; 4. Properties of Regular Languages; 5. Applications of Finite Automata;
6. Context-Free Grammars; 7. Pushdown Automata; 8. Grammars and Equivalencies;
9. Properties of Context-free Languages;
10. Deterministic Parsing; 11. Turing Machines;
12. Variations of Turning Machines;
13. Decidable Problems and Recursive Languages; 14. Diagonalization and the Halting Problem; 15. More Undecidable Problems;
16. Recursive Functions; 17. Time Complexity;
18. Space Complexity; 19. NP-Completeness

ISBN-13: 978-0-7637-4125-9

Hardcover • 228 Pages • © 2009

+ **Instructor Resources:** PP, SM



Praise for this text:

The Second Edition was awarded a “Textbook Excellence Award” (“Texty”) from the Text and Academic Authors Association (TAA). The “Textbook Excellence Award” recognizes works for their excellence in the areas of content, presentation, appeal, and teachability.

Essentials of Computer Organization and Architecture

Third Edition

Linda Null, Pennsylvania State University
Julia Lobur, Pennsylvania State University

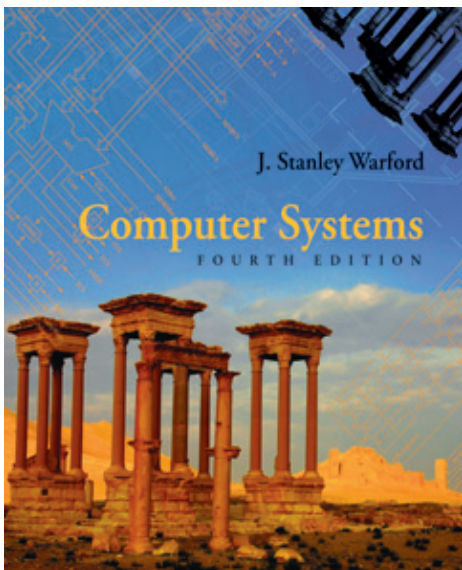
Thoroughly revised and updated, this *Third Edition* is a comprehensive resource that addresses all of the necessary organization and architecture topics, yet is appropriate for the one-term course. This best-selling text correlates to the 2008 ACM-IEEE Computer Science curriculum update and exposes readers to the inner workings of a modern digital computer through an integrated presentation of fundamental concepts and principles. The authors present real-world examples and focus on practical applications, thus encouraging students to develop a “big picture” understanding of how essential organization and architecture concepts are applied in the world of computing.

Key Features

- Correlated to the 2008 AC M-IEEE Computer Science curriculum update
- Provides students with in-depth coverage of the appropriate core concepts, while still offering the necessary exposure to less critical concepts
- Presents material in a logical progression, starting with low-level hardware and progressing to higher-level software, including assemblers and operating systems
- Includes real-world examples to provide students with a better understanding of how technology and techniques are combined for practical applications
- Contains **NEW** exercises within the text to reflect AC M-IEEE CS2008
- Educational software package includes an updated architecture simulator
- Can be bundled with an Intel supplement

ISBN-13: 978-1-4496-0006-8 • Hardcover • 844 Pages • © 2012

➤ **Instructor Resources:** IM, PP ➤ **Student Resources:** CW



Computer Systems

Fourth Edition

J. Stanley Warford, Pepperdine University

This *Fourth Edition* offers a clear, detailed, step-by-step introduction to the central concepts in computer organization, assembly language, and computer architecture. It invites students to explore the many dimensions of computer systems through a top-down approach to levels of abstraction. By examining how the different levels of abstraction relate to one another, the text helps students look at computer systems and their components as a unified concept.

Key Features

- Includes an improved and expanded review of C++ in a new section
- Coverage of character code is now even more student-friendly. A description of the Unicode character set replaces the treatment of EBCDIC.
- Includes more extensive coverage of RAID disk systems. The difference between RAID levels 01 and 10 is expanded with new figures and a new quantitative analysis exercise.
- The MIPS coverage is expanded and includes a systematic comparison of Pep/8 as a CISC architecture versus MIPS as a RISC architecture.

ISBN-13: 978-0-7637-7144-7

Hardcover • 700 Pages • © 2010

Additional Format: CourseSmart

⊕ **Instructor Resources:** AR, PP, SM

⊕ **Student Resources:** AR



Introduction to 80x86 Assembly Language and Computer Architecture

Second Edition

Richard C. Detmer,
Middle Tennessee State University

The *Second Edition* provides students with a clear introduction to the inner workings of the computer, and their many levels and functions. Through introducing real instruction sets and writing real assembly language programs, students will become acquainted with the basics of computer architecture. The *Second Edition* now includes the use of the Microsoft® Visual Studio® environment for editing, assembling, debugging, and executing problems. It continues to emphasize basic architecture, not just the 80x86 line, and now includes 64-bit operations but is still appropriate for those working with 32-bit computers.

Key Features

- Updated throughout to include 64-bit architecture
- The I/O package has been revised and is now Windows-oriented
- All macros and program examples are available on the text's website

ISBN-13: 978-0-7637-7223-9

Hardcover • 386 Pages • © 2010

⊕ **Instructor Resources:** AR, PP, SC, SM

⊕ **Student Resources:** SC

Principles of Modern Operating Systems

Second Edition

Jose Garrido
Richard Schlesinger
Kenneth E. Hoganson

All of Kennesaw State University

This revised and updated *Second Edition* presents a practical introduction to operating systems and illustrates these principles through a hands-on approach using accompanying simulation models developed in Java and C++. This text is appropriate for upper-level undergraduate courses in computer science. Case studies throughout the text feature the implementation of Java and C++ simulation models, giving students a thorough look at both the theoretical and the practical concepts discussed in modern OS courses. This

pedagogical approach is designed to present a clearer, more practical look at OS concepts, techniques, and methods without sacrificing the theoretical rigor that is necessary at this level. It is an ideal choice for those interested in gaining comprehensive, hands-on experience using the modern techniques and methods necessary for working with these complex systems.

Key Features

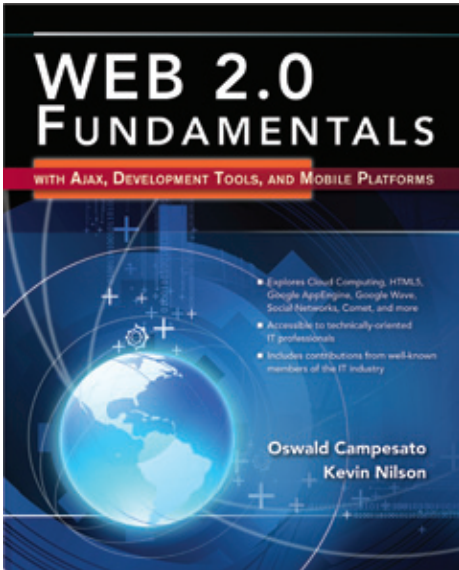
- The chapter on Security has been revised to include the most up-to-date information.
- The chapter on Firewalls and Network Security has been updated to include material on middleware that allows applications on separate machines to communicate (e.g. RMI, COM+, and Object Broker).
- Includes a new chapter dedicated to Virtual Machines
- Provides introductions to various types of scams
- Updated to include information on Windows 7 and Mac OS X throughout the text
- Contains new material on basic hardware architecture that operating systems depend on
- Includes new material on handling multi-core CPUs

Contents

1. Basic Concepts of Operating Systems
 2. The Computer System: An Overview
 3. Processes and Threads
 4. System Performance and Models
 5. Systems with Multiprogramming
 6. CPU Scheduling
 7. Synchronization Principles
 8. Deadlocks
 9. File Management
 10. The I/O System
 11. Memory Management
 12. Security and Protection
 13. Networking and Distributed Systems
 14. Virtual Machines
- Appendix A: Introduction to Using Linux
 Appendix B: Java and POSIX Threads
 Appendix C: The Java Modeling Framework
 Appendix D: Psim3
 Appendix E: Overview of Probability Theory
 Appendix F: Using the C++ Models

ISBN-13: 978-1-4496-2634-1 • Hardcover • 544 Pages • © 2013

⊕ **Instructor Resources:** AE, PP



Web 2.0 Fundamentals

With AJAX, Development Tools, and Mobile Platforms

Oswald Campesato
Kevin Nilson

Designed for a broad spectrum of people with technically diverse backgrounds, this book covers the most recent developments in Web 2.0 programming topics and applications, including up-to-date material on cloud computing, Google AppEngine, Social Networks, Comet, HTML5, semantic technology, and a chapter on the future of the Web. This comprehensive resource prepares readers for more advanced technical topics in Web 2.0. The accompanying CD-ROM and companion website provide code samples from the book and appendices with an extensive set of links (over 1,000) for supplemental material and links for the Twitter and Facebook Pages.

Contents

1. Introduction; 2. Landscape of the Web; 3. JSON & XML; 4. Ajax; 5. Productivity and Testing Tools; 6. Debugging Tools; 7. The Facebook Platform; 8. The OpenSocial Platform; 9. Mash-ups and Search Technology; 10. Cloud Computing Part 1; 11. Cloud Computing Part 2; 12. XML, Java, and GAE; 13. Semantic Technology; 14. Web 2.0 Comprehensive Project; 15. Comet; 16. Mobile Development Part 1; 17. Mobile Development Part 2; 18. Epilogue: The Future of the Web

ISBN-13: 978-0-7637-7973-3
Paperback • 751 Pages • © 2011

Web-Based Application Development

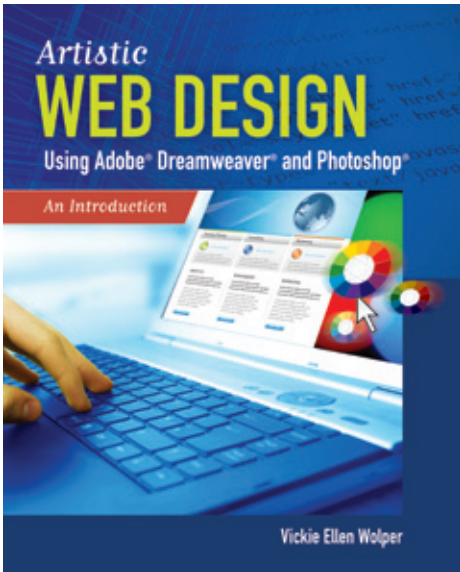
Ralph F. Grove,
James Madison University

This text presents an introduction to the concepts, theories, practices, languages, and tools used to develop applications for the World Wide Web. It explores the important fundamentals of Web applications while also introducing the programming and technology necessary to put these ideas into practice. This book goes beyond presenting the languages and tools found in other texts by including networking, architecture, security, reliability, and other important concepts and theories necessary for today's web applications.

Key Features

- Includes a resource CD-ROM that includes: examples; color figures; MyWebApp source code; MVCWebApp source code; case study; and “how-to’s” for Tomcat, Ant, MySQL, and NetBeans
- End-of-chapter review questions prompt readers to revisit and recall key concepts.
- Provides case studies, examples, and problems.

ISBN-13: 978-0-7637-5940-7
Paperback • 329 Pages • © 2010



Artistic Web Design Using Adobe® Dreamweaver® and Photoshop®

An Introduction

Vickie Ellen Wolper

This book provides an understanding of the principles of artistic design as they relate to the Web, followed by techniques using Adobe® Dreamweaver®, resulting in the ability to create effective Web sites. Each chapter is comprised of three sections; *new concepts*, *reinforcing your knowledge* through projects and exercises, and a *supplementary exercise* designed to offer the reader the opportunity to build their own website using the concepts from each chapter. By the end of the book, the reader will have their very own unique web site!

Key Features

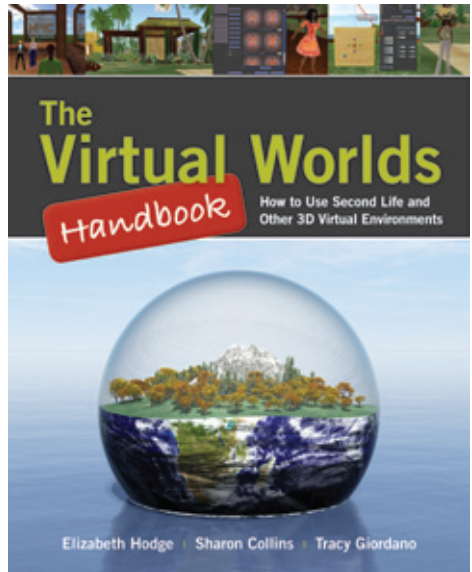
- Provides an introduction to Adobe® Dreamweaver® and progresses to web design.
- Full-color and vibrantly illustrated to emphasize the psychological influence of colors, the personality of type, and the principles of design as they relate to the Web.
- A CD-ROM with images, sample web pages, and more accompanies the book.

ISBN-13: 978-0-7637-8594-9

Paperback • 492 Pages • © 2011

+ **Instructor Resources:** AR, PP

+ **Student Resources:** CD



The Virtual Worlds Handbook

How to Use Second Life® and Other 3D Virtual Environments

Elizabeth Hodge

Sharon Collins

Tracy Giordano

all of East Carolina University

This book with CD-ROM provides a user-friendly approach that will help trainers and educators create an effective and interactive environment within the Second Life® virtual world. This book was written to help the novice user tackle the natural learning curve while providing the experienced user with tips, tools, and tricks to help any educator or trainer meet their professional goals faster.

Contents

1. Exploration of Various Virtual Environments;
2. Creating Your Account and Beginning Your Journey;
3. Customizing the New You and Your First Virtual Space;
4. Let's Go Virtual!;
5. Inventory Overload;
6. Basic Building Skills;
7. Intermediate Building Skills;
8. Advanced Building Skills and Interactive Scripting;
9. Designing the Land;
10. University and Program Assessment;
11. Teaching Methods for In-World Engagement;
12. Teaching Tools;
13. Your Moodle and Sloodle Connection;
14. Other Uses for Second Life;
15. In-World Educational Spaces and Virtual Hot Spots
16. Web Resources;
17. Tying It All Together

ISBN-13: 978-0-7637-7747-0

Paperback • 340 Pages • © 2011



Web Development with JavaScript and Ajax Illuminated

Richard Allen,

Georgia Tech Research Institute

Kai Qian, Southern Polytechnic State University

Lixin Tao, Pace University

Xiang Fu, Hofstra University

This text provides readers with the cutting-edge techniques needed for web development in Web 2.0. It is ideal for the undergraduate student delving into the world of web development or novice web developers looking to further their understanding of JavaScript and Ajax. It illustrates how to create dynamic, interactive web applications with ease and interesting real-world case studies throughout offer a glimpse of actual web development scenarios.

Key Features

- A Visual QuickStart Guide within the text provides:
 - Easy visual approach diagrams and screen shots.
 - Concise step-by-step explanations allow readers to move through the text with ease.
 - Allows readers to easily understand the concept of asynchronous http requests in Ajax.

ISBN-13: 978-0-7637-5489-1

Paperback • 497 Pages • © 2009

Additional Format: CourseSmart

⊕ **Instructor Resources:** PP, SM, TB

⊕ **Student Resources:** SC



JavaServer™ Pages Illuminated

Prabhakar Metlapalli, University of Maryland University College

JavaServer™ Pages Illuminated is a comprehensive, student-friendly introduction to the fundamentals of JavaServer™ Pages technology. Students are able to create and maintain high-powered websites using JSP with ease. Written for upper-division courses in programming and web development, *JavaServer™ Pages Illuminated* is the ideal text for those interested in developing dynamic web pages using Open-Source technology.

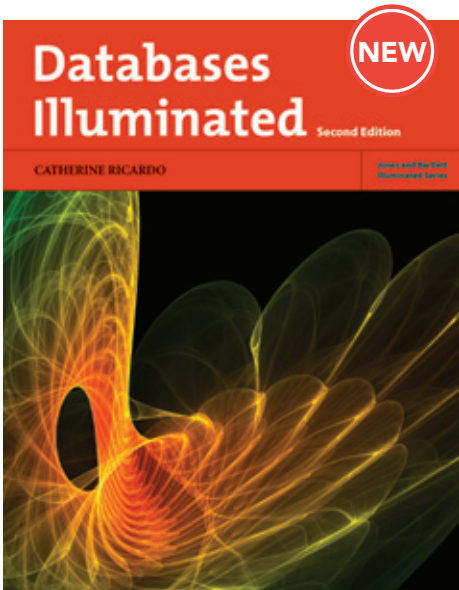
Key Features

- Includes an extensive review of Java™, HTML, and JavaScript™.
- Numerous real-world exercises are presented after each main topic.
- End-of-chapter exercises are ideal for homework assignments or in-class projects.

ISBN-13: 978-0-7637-3592-0

Paperback • 531 Pages • © 2008

⊕ **Instructor Resources:** IM, PP



Databases Illuminated Second Edition

Catherine M. Ricardo, Iona College

This new updated *Second Edition* integrates database theory with a practical approach to database design and implementation. The text is specifically designed for the modern database student, who will be expected to know both theory and applied design and implementation as professionals. This *Second Edition* has been revised and updated to incorporate information about the new releases of Access 2010, Oracle 11g, and InterSystems Cache. It includes material on the most recent topics such as Web access, JDBC, web programming, XML, data mining, and other emerging database technologies and applications.

Key Features

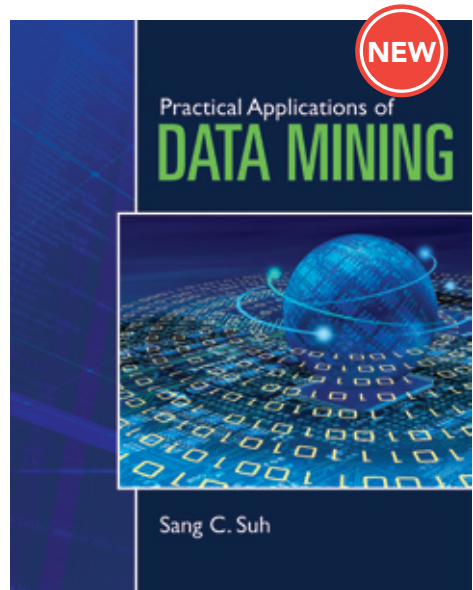
- Incorporates the new curriculum recommendations in ACM Computer Science Curriculum 2008 and ACM/AIS IS2010 Curriculum Guidelines for IS2010.2, Data and Information Management, including more attention to security, concurrency, and net-centric computing.
- Includes the extensive object-relational features of the current release of Oracle, with downloadable code for students to implement.

ISBN-13: 978-1-4496-0600-8

Hardcover • 600 Pages • © 2012

⊕ **Instructor Resources:** AE, CW, IM, PP, TB

⊕ **Student Resources:** CW, AR, LE, SC



Practical Applications of Data Mining

Sang C. Suh, Texas A&M University

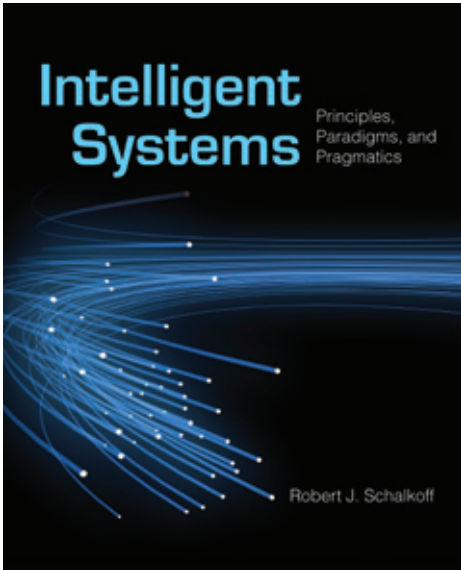
Practical Applications of Data Mining emphasizes both theory and applications of data mining algorithms. Various topics of data mining techniques are identified and described throughout, including clustering, association rules, rough set theory, probability theory, neural networks, classification, and fuzzy logic. Each of these techniques is explored with a theoretical introduction and its effectiveness is demonstrated with various chapter examples. This book will help any database and IT professional understand how to apply data mining techniques to real-world problems.

Key Features

- Offers an introduction to practical applications of data mining algorithms with clear illustrations of concepts and techniques
- Contains a rich set of examples in each chapter to connect theories to practices
- Covers topics needed to meet the requirements of modern data and knowledge engineering processes
- Enhances student learning with online access to data mining algorithm implementation

ISBN-13: 978-0-7637-8587-1

Paperback • 320 Pages • © 2012



Intelligent Systems

Principles, Paradigms and Pragmatics

Robert J. Schalkoff, Clemson University

This text takes a modern, 21st-century approach to the concepts of Artificial Intelligence and includes the latest developments and approaches related to AI. The author is careful to make the important distinction between theory and practice, and focuses on a broad core of technologies, providing students with an accessible and comprehensive introduction to key AI topics.

Key Features

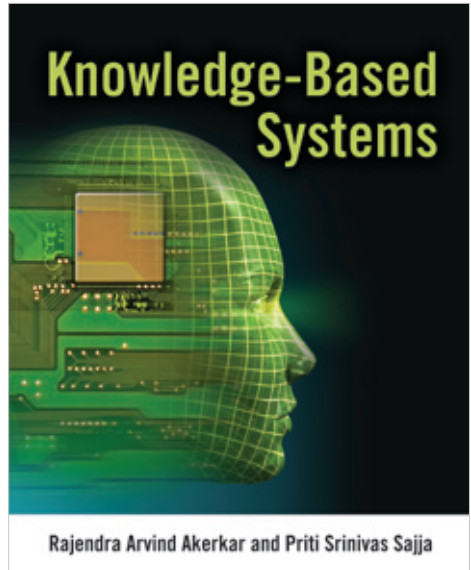
- Discusses Logic, Fuzzy Systems, Genetic Algorithms, IS programming and more.
- Conveys a technical perspective, letting readers determine when an IS approach is appropriate for a given problem.
- Includes hands-on exercises to implement the IS technologies.
- Provides a current look at off-the-shelf tools for developing production systems and ontologies.
- Discusses the technology and pragmatics of embedded IS software.
- Provides comprehensive references to both seminal works and current implementation strategies.

ISBN-13: 978-0-7637-8017-3

Hardcover • 762 Pages • © 2011

Additional Format: CourseSmart

+ Instructor Resources: AR, IM



Knowledge-Based Systems

Rajendra Akerkar, Technomathematics Research Foundation

Priti Sajja, Sardar Patel University, India

Ideal for advanced-undergraduate and graduate students, this text is designed to help users develop an appreciation of KBS and their architecture and understand a broad variety of knowledge-based techniques for decision support and planning. Each of the 12 chapters is designed to be modular, providing instructors with the flexibility to model the book to their own course needs.

Key Features

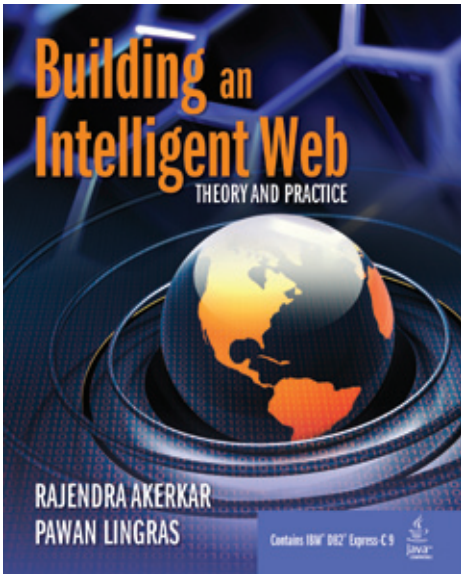
- Presents introductory AI, KBS, Knowledge Management, and Soft Computing.
- Mini-projects and exercises urge students to apply what they have learned.
- Case studies present actual hybrid KBS with architectural design, experimental results, and output.

ISBN-13: 978-0-7637-7647-3

Paperback • 354 Pages • © 2010

Additional Format: CourseSmart

+ Instructor Resources: IM, PP



Building an Intelligent Web

Theory and Practice

Pawan Lingras, Saint Mary's University
Rajendra Akerkar, Technomathematics
 Research Foundation

Building an Intelligent Web introduces students and professionals to the state-of-the-art development of Web Intelligence techniques and teaches how to apply these techniques to develop the next generation of intelligent websites. Each chapter contains theoretical bases, which are also illustrated with the help of simple numeric examples, followed by practical implementation. Students will find this text to be an active and exciting introduction to advanced Web mining topics. Includes IBM DB2 Express-C, a data server used in the development and deployment of applications including: XML, C/C++, Java™, .NET, PHP, and more.

Key Features

- Theoretical bases are illustrated using simple numeric explanations and practical implementations.
- End-of-chapter set exercises reinforce the textbook material and are suitable as assigned homework problems.
- A DB2 Discovery DVD accompanies the textbook and contains DB2 Express-C install for Windows.

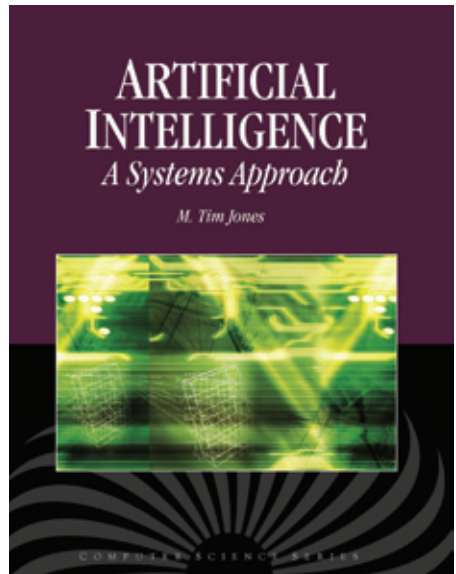
ISBN-13: 978-0-7637-4137-2

Hardcover • 326 Pages • © 2008

Additional Format: CourseSmart

⊕ **Instructor Resources:** AR, PP

⊕ **Student Resources:** CD



Artificial Intelligence

A Systems Approach

M. Tim Jones

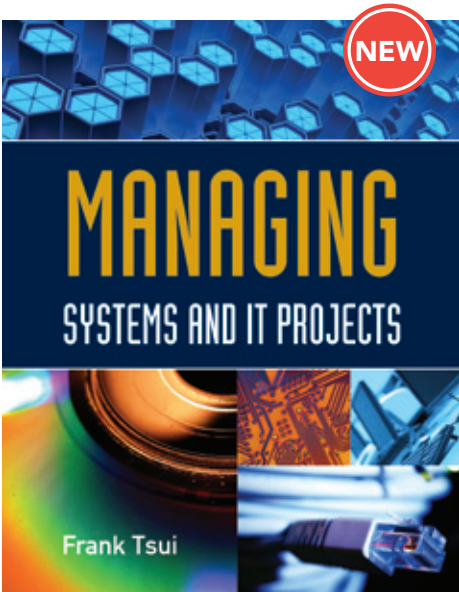
This book offers students and AI programmers a new perspective on the study of artificial intelligence concepts. The essential topics and theory of AI are presented, but it also includes practical information on data input & reduction as well as data output (i.e., algorithm usage). Because traditional AI concepts such as pattern recognition, numerical optimization and data mining are now simply types of algorithms, a different approach is needed. This “sensor / algorithm / effector” approach grounds the algorithms with an environment, helps students and AI practitioners to better understand them, and subsequently, how to apply them. The book has numerous up to date applications in game programming, intelligent agents, neural networks, artificial immune systems, and more. A CD-ROM with simulations, code, and figures accompanies the book.

ISBN-13: 978-0-7637-7337-3

Hardcover • 498 Pages • © 2008

⊕ **Instructor Resources:** PP

⊕ **Student Resources:** CD



Managing Systems and IT Projects

Frank Tsui,
Southern Polytechnic State University

This book is designed for software engineering students and project management professional in the IT and software industry. It focuses on the four phases of management—planning, organizing, monitoring, and adjusting (POMA)—and tailors to systems and applications on software projects. The tasks and techniques utilized in each of the POMA management phases are discussed with specific software engineering and IT-related examples. Drawing from years of experience in the industry, the author presents material within a framework of real-world examples and exercises that help readers apply new concepts to everyday situations.

Key Features

- An Additional Skills section includes four chapters—Project Team, Change Control, Task Scheduling, and Effort Estimation—that allow instructors to tailor the course to the desired emphasis.
- Exercises at the end of each chapter include questions that go beyond rehearsing material covered in the chapter and encourages students to think critically.

ISBN-13: 978-0-7637-9061-5
Paperback • 364 Pages • © 2011



Essentials of Software Engineering

Second Edition

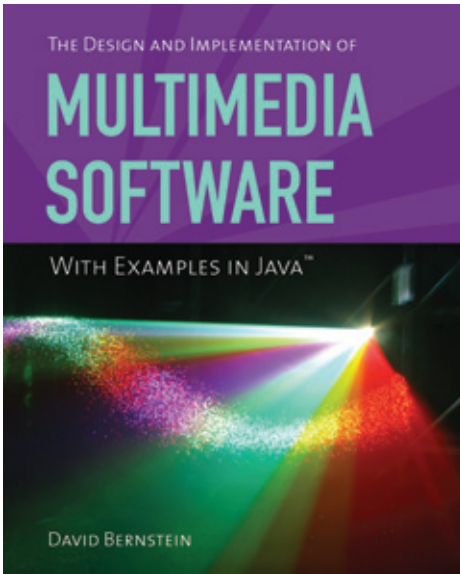
Frank Tsui
Orlando Karam
Both from Southern Polytechnic State University

This text presents the complete life cycle of a software system. It is divided into six distinct sections covering programming concepts, system analysis and design, principles of software engineering, development and support processes, methodologies, and product management. Presenting topics emphasized by the IEEE Computer Society sponsored Software Engineering Body of Knowledge (SWEBOK) and by the Software Engineering 2004 Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering.

New Topics

- Process definition and communications added in Chapter 4.
- Requirements traceability added in Chapter 6.
- Further design concerns, such as impedance mismatch in Chapter 7.
- Law of Demeter in Chapter 8.
- Measuring project properties and GQM in Chapter 13.
- Security and software engineering in a new Chapter 14.

ISBN-13: 978-0-7637-8534-5
Paperback • 400 Pages • © 2011
Additional Format: CourseSmart
+ **Instructor Resources:** PP, SC, SM



The Design and Implementation of Multimedia Software with Examples in Java

David Bernstein, James Madison University

This text is intended for software engineers and object-oriented programmers who are interested in designing and developing multimedia software. At a high level, it discusses the physics, biology and psychology of visual and auditory perception and the implications of these processes for the characterization of multimedia software. At an intermediate level, it discusses the use of various patterns in the design of multimedia software. At a lower level, it discusses different ways of adding multimedia functionality to applications of various kinds.

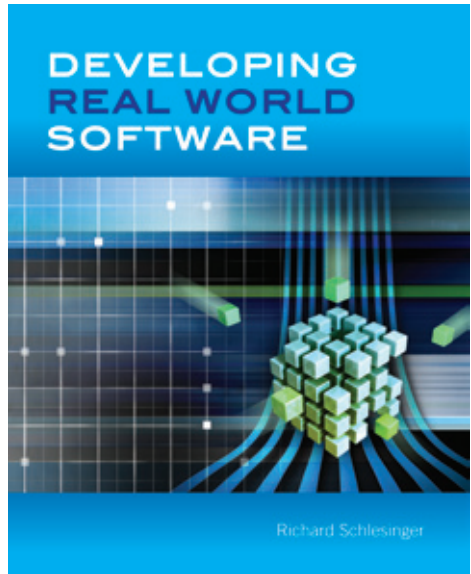
Key Features

- Includes extensive code examples in Java, including a complete multimedia library and numerous applications.
- Includes a unified framework for developing interchangeable applets/applications.
- Proceeds from requirements through alternative designs to the selection and implementation of a particular design.
- Uses UML diagrams to consider designs at different level of abstraction.

ISBN-13: 978-0-7637-7812-5

Paperback • 372 Pages • © 2011

+ Instructor Resources: AR, PP



Developing Real World Software

Richard Schlesinger, Kennesaw State University

Ideal for use in a software engineering lab or special topics setting, this text is a practical guide for developing useful, real world software applications that are high performing, secure, reliable, and configurable. It expands upon material presented in traditional software engineering texts and focuses on key principles from a practical application development perspective so that students can experience all aspects of the process first-hand. The theme of encapsulation is stressed throughout the book as it explains how it can be utilized to tremendously improve the understandability of large real world programs.

Contents

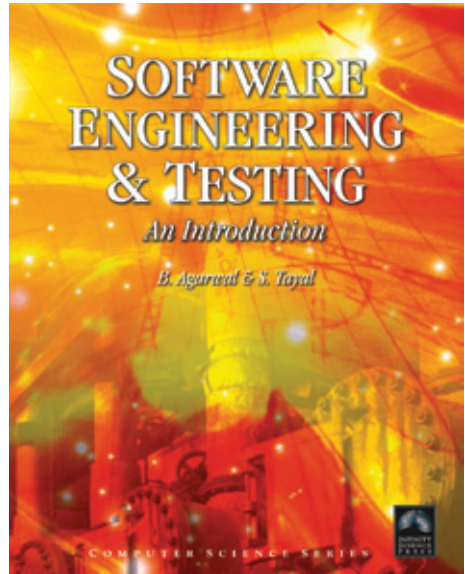
1. Starting the Project
2. Object Oriented Design & Programming
3. Configurable Applications
4. Error Handling and Robustness
5. Design and Programming for Security
6. Using Threads and Processes
7. Synchronization & Deadlock Prevention
8. Performance Improvement
9. Program Correctness and Testing

ISBN-13: 978-0-7637-7319-9

Paperback • 117 Pages • © 2010

Additional Format: CourseSmart

+ Instructor Resources: SC



Software Architecture and Design Illuminated

Kai Qian, Southern Polytechnic State University
Xiang Fu, Hofstra University
Lixin Tao, Pace University
Chong-wei Xu, Kennesaw State University
Jorge Diaz-Herrera, Rochester Institute of Technology

This text is the ideal text for undergraduate and graduate students delving into this critical area of the software development process. It offers a coherent and integrated approach to the discipline of software architectural design and covers a complete set of important methodologies, architectural styles, design guidelines, and design tools. Java™ is used throughout the book to explain design principles and present case studies. Review questions, exercises, and design assignments round out most chapters and allow students to test themselves on key material.

Key Features

- End-of-chapter study aids and exercises allow students to test themselves on key material and reinforce important concepts.
- Discusses the architecture and implementation of web-centric systems.
- Follows a complete case study, from architecture to implementation, throughout the text.

ISBN-13: 978-0-7637-5420-4

Paperback • 387 Pages • © 2010

⊕ **Instructor Resources:** PP, TB

Software Engineering and Testing

B.B. Agarwal
M. Gupta
S.P. Tayal

Designed for an introductory software engineering course or as a reference for programmers, this up to date text uses both theory and applications to design reliable, error-free software. Starting with an introduction to the various types of software, the book moves through life-cycle models, software specifications, testing techniques, computer-aided software engineering and writing effective source code.

Key Features

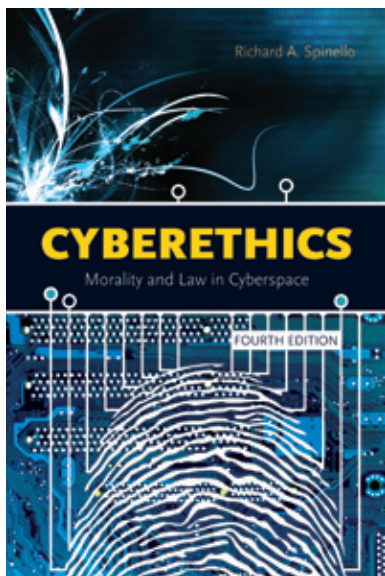
- Starts with various types of software, then life-cycle models, software specifications, testing techniques, computer-aided software engineering, and writing effective source code.
- Covers software development techniques used in various applications including VisualBasic, Oracle, SQLServer, and CrystalReports.
- Includes a CD-ROM with source code and third-party software engineering applications.

ISBN-13: 978-1-9340-1555-1

Hardcover • 515 Pages • © 2010

⊕ **Instructor Resources:** SC

⊕ **Student Resources:** CD



Cyberethics

Morality and Law in Cyberspace
Fourth Edition

Richard A. Spinello, Boston College

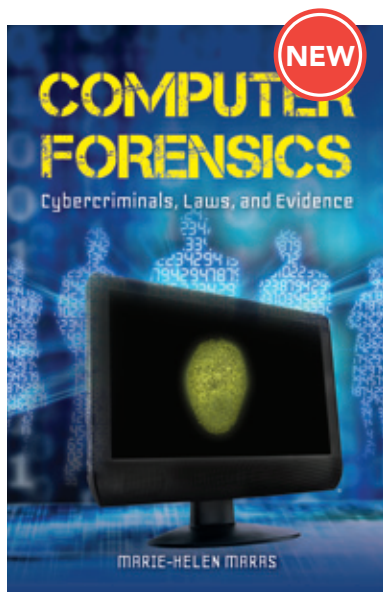
Revised and updated to reflect new technologies in the field, the *Fourth Edition* of this popular text takes an in-depth look at the social costs and moral problems that have emerged by the ever expanding use of the Internet, and offers up-to-date legal and philosophical examinations of these issues. It focuses heavily on content control, free speech, intellectual property, and security while delving into new areas of blogging and social networking. Case studies throughout discuss real-world events and include coverage of numerous hot topics. In the process of exploring current issues, it identifies legal disputes that will likely set the standard for future cases.

Contents

1. The Internet and Ethical Values
2. Regulating and Governing the Internet
3. Free Speech and Content Controls in Cyberspace
4. Intellectual Property in Cyberspace
5. Regulating Internet Privacy
6. Securing the Electronic Frontier

ISBN-13: 978-0-7637-9511-5

Paperback • 242 Pages • © 2011



Computer Forensics

Cybercriminals, Laws, and Evidence

Marie-Helen Maras, Farmingdale State College

Balancing technicality and legal analysis, this text enters into the world of cybercrime by exploring what it is, how it is investigated, and the regulatory laws around the collection and use of electronic evidence. It introduces students to the technology involved in computer forensics investigations and the technical and legal difficulties involved in searching, extracting, maintaining and storing electronic evidence, while simultaneously looking at the legal implications of such investigations and the rules of legal procedure relevant to electronic evidence. Significant and current computer forensics developments are examined, as well as the implications for a variety of fields including computer science, security, criminology, law, public policy and administration.

Key Features

- Covers a variety of cybercrimes including online scams, identity theft, cyberbullying, cyberterrorism, and child pornography.
- Provides comprehensive coverage of civil, criminal and corporate investigations and the legal issues that arise with such investigations

ISBN-13: 978-1-4496-0072-3

Paperback • 372 Pages • © 2012

➤ Instructor Resources: IM, PP, TB



Computer Security

Protecting Digital Resources

Robert C. Newman, Georgia Southern University; President, NellNetInc

This text provides a broad approach to computer-related crime, electronic commerce, corporate networking, and Internet security; topics that have become increasingly important as more and more threats are made on our internet environment. This book is oriented toward the average computer user, business professional, government worker, and those within the education community, with the expectation that readers can learn to use the network with some degree of safety and security. The author places emphasis on the numerous vulnerabilities and threats that are inherent in the Internet environment.

Key Features

- Addresses the multitude of security issues that impact personal and organizational digital resources.
- Information is presented concerning wireless electronic commerce, namely E-Commerce, which includes Business-to-Business, Business-to Consumer, and Consumer-to-Consumer.
- Includes several chapters devoted to the topics of computer contingency planning, disaster recovery, intrusion detection, and intrusion prevention.

ISBN-13: 978-0-7637-5994-0

Paperback • 453 Pages • © 2010

Additional Format: CourseSmart

 Instructor Resources: PP, TB

Technology and Society

Jan L. Harrington, Marist College

Technology and Society provides a broad, balanced perspective on the impact of technology on global society since the beginning of the industrial revolution. Its organization reflects the many facets of our world that have felt the effects of technology; economics, government, the arts, and interpersonal communications. Discussion of the many technology issues of today—particularly privacy and society—appear in every chapter as they relate to the topics at hand. Throughout the text readers will find hundreds of web links and references to additional material. *Things to Think About* sections appear at the end of each chapter and urge students to think and write critically about a variety of technological topics.

Contents

1. Generating Change
2. The History of Technology
3. Technological Failures
4. Resisting Technology
5. The Accessibility of Technology
6. Economics and Work
7. Human Behavior: Communicating and Interaction
8. Government, Politics, and War
9. Children, Education, and Libraries
10. Science and Medicine
11. Entertainment and the Arts
12. Looking Ahead

ISBN-13: 978-0-7637-5094-7

Paperback • 296 Pages • © 2009

COMING
SOON

Information Security for Managers

Michael Workman

Most textbooks on information security are organized topically. *Information Security for Managers* take a different approach. Pedagogically, it utilizes an incremental development method called knowledge scaffolding—a proven educational technique for learning subject matter thoroughly by reinforced learning through an elaborative rehearsal process.

This text includes coverage on threats to confidentiality, integrity, and availability, as well as countermeasures to preserve these. It also draws extensively from the latest applied research and development, rather than simply rehashing materials and topics.

ISBN-13: 978-0-7637-9301-2

Hardcover • 640 Pages • © 2013

COMING
SOON

Elementary Information Security

Richard Smith

This comprehensive, accessible Information Security text is ideal for the one-term, undergraduate college course. The author integrates risk assessment and security policy throughout the text, believing that security systems work best at achieving goals they are designed to meet, and security policy ties real-world goals to security mechanisms. Early chapters in the text discuss individual computers and small LANS, while later chapters deal with distributed site security and the Internet. Cryptographic topics follow the same progression, starting on a single computer and evolving to Internet-level connectivity. Mathematical concepts throughout the text are defined and tutorials with mathematical tools are provided to ensure students grasp the information at hand.

ISBN-13: 978-1-4496-6141-7

Paperback • 576 Pages • © 2013

Information Systems Security

12 Fully Developed Texts to Fit the Needs of Your Curriculum

The Jones & Bartlett Learning **Information Systems Security & Assurance Series** delivers fundamental IT security principles packed with real-world applications and examples for IT Security, Cybersecurity, Information Assurance, and Information Systems Security programs. Authored by Certified Information Systems Security Professionals (CISSPs), and reviewed by leading technical experts in the field, these books are current, forward-thinking resources that enable readers to solve the cybersecurity challenges of today and tomorrow.



➤ **Fundamentals of Information Systems Security**

David Kim
Michael G. Solomon

ISBN-13: 978-0-7637-9025-7
Paperback • 514 Pages • © 2012

➤ **Network Security, Firewalls, and VPNs**

J. Michael Stewart

ISBN-13: 978-0-7637-9130-8
Paperback • 482 Pages • © 2011

➤ **Managing Risk in Information Systems**

Darril Gibson

ISBN-13: 978-0-7637-9187-2
Paperback • 454 Pages • © 2011

➤ **System Forensics, Investigation, and Response**

John C. Vacca
K. Rudolph

ISBN-13: 978-0-7637-9134-6
Paperback • 339 Pages • © 2011

➤ **Security Strategies in Web Applications and Social Networking**

Mike Harwood
Marcus Goncalves
Matthew Pemble

ISBN-13: 978-0-7637-9195-7
Paperback • 406 Pages • © 2011

➤ **Hacker Techniques, Tools, and Incident Handling**

Sean-Philip Oriyano
Michael Gregg

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and Public Key Infrastructure

Bill Ballad
Tricia Ballad
Erin Banks

ISBN-13: 978-0-7637-9128-5
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› Security Strategies in Linux
Platforms and Applications

Michael Jang

ISBN-13: 978-0-7637-9189-6
Paperback • 512 Pages • © 2011

› Security Policies and
Implementation Issues

Rob Johnson
Mark Merkow

ISBN-13: 978-0-7637-9132-2
Paperback • 438 Pages • © 2011

› Legal Issues in Information
Security

Joanna Grama

ISBN-13: 978-0-7637-9185-8
Paperback • 526 Pages • © 2011

› Security Strategies in
Windows Platforms and
Applications

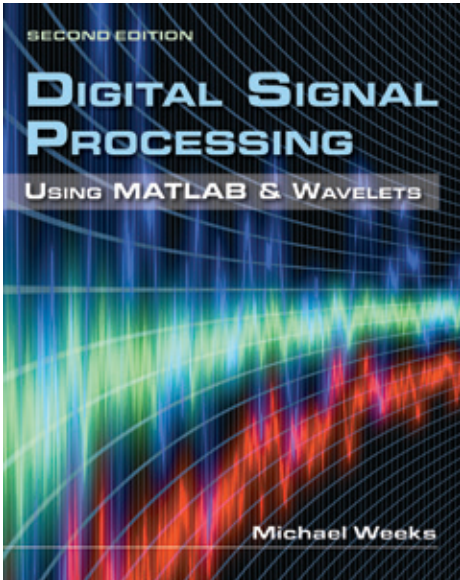
Michael G. Solomon

ISBN-13: 978-0-7637-9193-3
Paperback • 384 Pages • © 2011

› Auditing IT Infrastructures
for Compliance

Martin Weiss
Michael G. Solomon

ISBN-13: 978-0-7637-9181-0
Paperback • 384 Pages • © 2011



Digital Signal Processing Using MATLAB® & Wavelets

Second Edition

Michael Weeks, Georgia State University

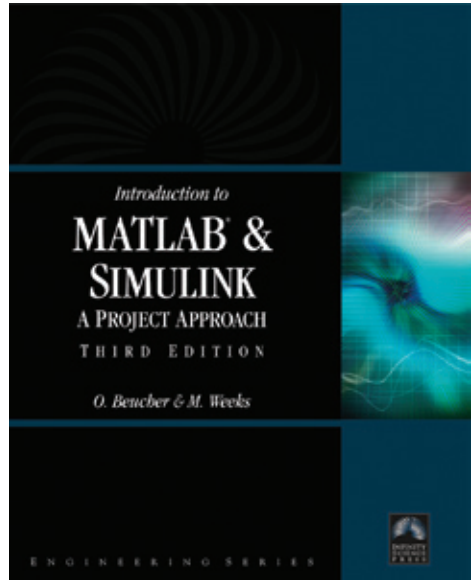
Designed for upper division engineering and computer science students as well as practicing engineers and scientists, this text emphasizes the practical applications of signal processing. Over 100 MATLAB examples and wavelet techniques provide the latest applications of DSP, including image processing, games, filters, transforms, networking, parallel processing, and sound. Beginning with an introduction to MATLAB programming, it moves through filters, sinusoids, sampling, the Fourier transform, the z-transform and other key topics.

Table of Contents

1. Introduction
2. MATLAB
3. Filters
4. Sinusoids
5. Sampling
6. The Fourier Transform
7. The z-Transform
8. The Discrete Wavelet Transform
9. The Continuous Wavelet Transform
10. Applications

ISBN-13: 978-0-7637-8422-5

Hardcover • 492 Pages • © 2011



Introduction to MATLAB® & SIMULINK®

A Project Approach
Third Edition

Ottmar Beucher

Michael Weeks, Georgia State University

This book provides the optimal introduction to MATLAB® and Simulink®, the primary tools in engineering, science, and industry for simulating dynamic systems. Using the latest versions of the software, the book also has 20 hands-on projects that provide a practical mastery of the subject areas, including the code and executable files. Apart from a basic knowledge of mathematics and physics, no further specialist knowledge is necessary. There are also over 80 in-text exercises, where readers themselves can check their mastery of the material. A CD-ROM with source code accompanies the book.

Key Features

- Designed for the reader who does not have extensive math and programming experience.
- Contains many practical applications of MATLAB and Simulink.
- Accompanied by a CD-ROM containing MATLAB examples, source code, and projects.

ISBN-13: 978-1-9340-1504-9

Paperback • 400 Pages • © 2008

+ **Instructor Resources:** AR, PP



Exploring Bioinformatics

A Project-Based Approach

Caroline St. Clair,
North Central College
Jonathan E. Visick,
North Central College

This text is intended for an introductory course in bioinformatics at the undergraduate level. Through hands-on projects, students are introduced to current biological problems and then explore and develop bioinformatic solutions to these issues. Each chapter presents a key problem, provides basic biological concepts, introduces computational techniques to address the problem, and guides students through the use of existing web-based tools and software solutions. This progression prepares students to tackle the On-Your-Own Project, where they develop their own software

solutions. Topics such as antibiotic resistance, genetic disease, and genome sequencing provide context and relevance to capture student interest.

Key Features

- **Guided Programming Projects:** Guided analysis of solutions to current biological problems enables students to understand the computational approaches to real-world issues.
- **On-Your-Own Projects:** Students are provided with the opportunity to apply their problem-solving and programming skills to new problems.
- **Web Exploration:** Includes widely used web-based tools to explore bioinformatic approaches to important biological questions.
- **Perl: Need to Know:** Provides key Perl and programming syntax for developing software solutions within the chapter exercises.
- **Putting Your Skills into Practice Exercises:** Test students' problem-solving abilities through either modifying or implementing existing code.
- **BioConcept Questions:** Help students assess whether their biology knowledge is sufficient to master the chapter material.

ISBN-13: 978-0-7637-5829-5 • Paperback • 360 Pages • © 2010

🔗 **Instructor Resources:** AR, PP 🔗 **Student Resources:** CW



Python for Bioinformatics

Jason Kinser, George Mason University

Ideal for upper-level undergraduate and graduate courses, this book provides a clear introduction to the Python programming language and instructs beginners on the development of simple programming exercises.

ISBN-13: 978-0-7637-5186-9 • Paperback • 417 Pages • © 2009



Fundamentals of Game Development

Heather Maxwell Chandler, Founder & Executive Producer, Media Sunshine, Inc.

This book provides the practical aspects of the processes involved in developing and completing game projects. Designed for introductory game development and game production courses, this text provides a hands-on approach using examples and exercises to walk students through the entire process of developing a game from concept to completion. The book covers the basic topics discussed in an introductory text as well as history, game genres, design, story-telling, character creation, pre-production, code release, career descriptions, and more.

Key Features

- **Does not require pre-requisites.** Students do not need any special art, engineering, programming, or design knowledge in order to understand the concepts discussed.
- **Emphasis is on design and production.** This book presents an overview of the fundamentals of developing a game from concept to completion.
- **Provides a case study** that illustrates the process of a game design concept becoming an actual game.

ISBN-13: 978-0-7637-7895-8

Paperback • 381 Pages • © 2011

Additional Format: CourseSmart

⊕ **Instructor Resources:** AE, PP

⊕ **Student Resources:** CD

Game Engine Design and Implementation

Alan Thorn

What is a game engine? What does it do? How are they useful to both developers and the game? And how are they made? These, and other important engine related questions, are explored and discussed in this book. In clear and concise language, this book examines through examples and exercises both the design and implementation of a video game engine.

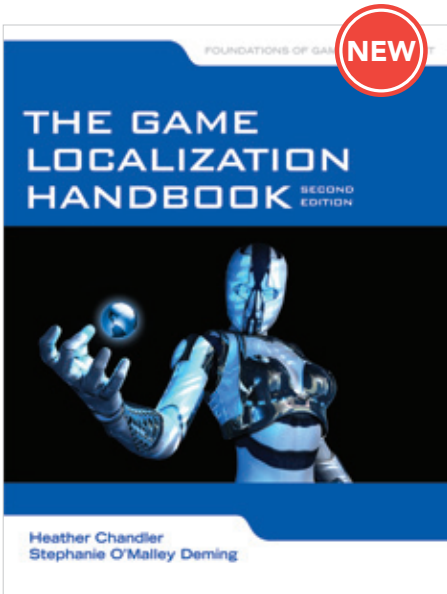
Key topics covered: core components of a game engine, audio and sound systems, file and resource management, graphics and optimization techniques, scripting and physics, and much more.

Key Features

- Examines how general purpose engines can be tweaked for specific game genres such as Action, RPG, Strategy, and Adventure
- Examines both 2D tile-based and real-time 3D engines
- Provides tips on how to make games cross-platform
- Explores input, audio, game tools, map editors, scripting, and more
- Includes self-tests, questions, exercises, and source code examples

ISBN-13: 978-0-7637-8451-5

Paperback • 594 Pages • © 2011



The Game Localization Handbook

Second Edition

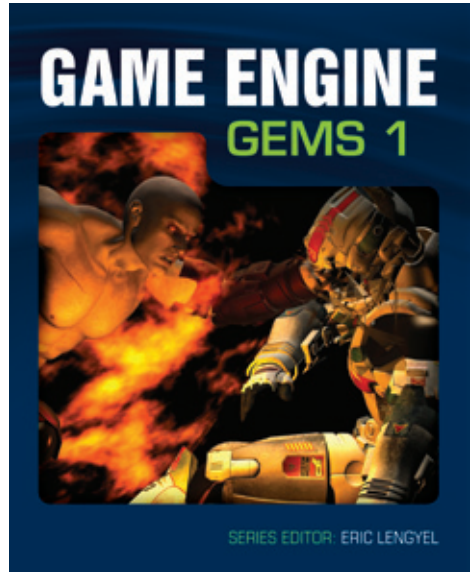
Heather Maxwell Chandler, Founder and Executive Producer, Media Sunshine, Inc.
Stephanie O'Malley Deming

Authored by two internationally known experts in game localization, this *Second Edition* provides information on how to localize software for games, whether they are developed for the PC, console, or other platforms. It includes advice, interviews, and case studies from industry professionals, as well as practical information on pre-production, production, translation, and testing of localized SKUs. Additionally, all major gaming platforms are discussed.

Key Features

- Concentrates on software localization specifically for all major platforms in the game industry
- Provides a detailed plan for planning and executing localized game SKUs
- Emphasizes localizations for European and Asian languages
- Offers advice from industry professionals on how to achieve localization-friendly development and uses real-world case studies

ISBN-13: 978-0-7637-9593-1
 Paperback • 300 Pages • © 2012
 + Student Resources: CD



Game Engine Gems

Volume One

Eric Lengyel

Game Engine Gems brings together in a single volume dozens of new articles from leading professionals in the game development industry. Each “gem” presents a previously unpublished technique related to game engines and real-time virtual simulations. Specific topics include rendering techniques, shaders, scene organization, visibility determination, collision detection, audio, user interface, input devices, memory management, artificial intelligence, resource organization, and cross-platform considerations. A CD-ROM containing all the source codes and demos accompanies the book.

Key Features

- All the articles are written by experienced professional software engineers.
- Covers not only graphics but a wide variety of game engine topics like artificial intelligence and cross-platform engineering
- Presents previously unpublished techniques related to game engines and real-time virtual simulations

ISBN-13: 978-0-7637-7888-0
 Paperback • 362 Pages • © 2011
 + Student Resources: CD



RPG Programming Using XNA Game Studio 3.0

Jim Perry

RPG Programming Using XNA Game Studio 3.0 provides detailed information on role-playing games (RPGs) and how to create them using Microsoft's XNA Game Studio 3.0. The book examines the history of the genre and takes a piece-by-piece approach to producing a 2D tile-based game, demonstrating how to create the various components that make up an RPG and implement them using C# and XNA Game Studio 3.0. By the end of the book, readers will have built a complete toolset that can be used to create data for their own RPGs.

ISBN-13: 978-1-5982-2065-0 • Paperback • 316 Pages • © 2009



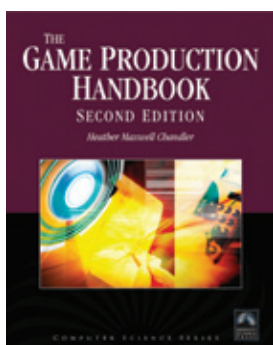
Game Design Foundations

Second Edition

Roger E. Pedersen

This book covers how to design a game from the important opening sentence, the “One Pager” document, the Executive Summary and Game Proposal, the Character Document to the Game Design Document. It describes game genres, where game ideas come from, game research, innovation in gaming, important gaming principles such as game mechanics, game balancing, AI, path finding, and game tiers. The basics of programming, level designing, and film scriptwriting are explained by example. Each chapter has exercises to hone in on the newly learned designer skills.

ISBN-13: 978-1-5982-2034-6 • Paperback • 384 Pages • © 2009



The Game Production Handbook

Second Edition

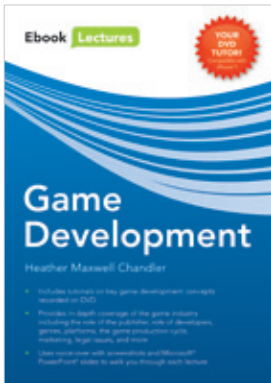
Heather Maxwell Chandler, Founder & Executive Producer, Media Sunshine, Inc.

This book presents information that a producer, lead, or studio manager needs to know in order to successfully develop a game from concept to gold master. The general game development topics such as pre-production, production, testing, and code release are covered, along with more specific topics such as how to organize voice-over and mo-cap shoots, creating cinematics, working with marketing, localizations, working with external contractors, writing documentation, and project management practices. New material includes new technologies, online gaming issues and middleware, and updated examples from next-generation games. It includes new interviews with industry experts who discuss insider knowledge and real world examples of what works and what doesn't work in game development.

ISBN-13: 978-1-9340-1540-7 • Hardcover • 482 Pages • © 2009

⊕ **Instructor Resources:** CD

⊕ **Student Resources:** CD



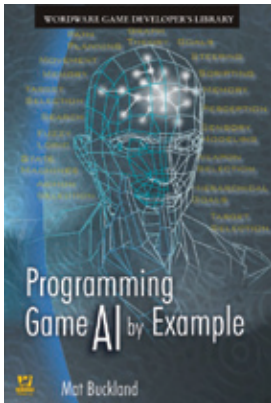
Game Development

Ebook Lectures

Heather Maxwell Chandler, Founder & Executive Producer, Media Sunshine, Inc.

Designed for mastery of subjects through self-study without the use of printed books, these full-length lectures provide general information on the game development process using Microsoft® PowerPoint® slides and screenshots from software applications or the WWW. The lectures are geared toward students who are learning about game production and how games are made from concept to release. The lectures provide a broad overview on the game development process, including pre-production, production, testing, and code release; and information on how game developers, publishers, marketing, sales, and PR all work together to release a game. Each of the five lectures is approximately fifty minutes long.

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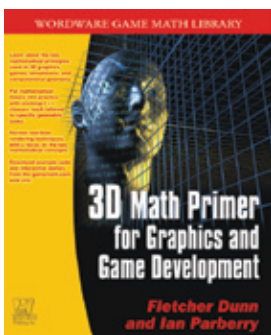


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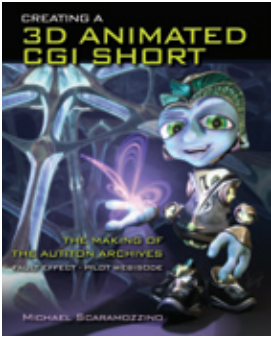
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Ian Parberry, University of North Texas

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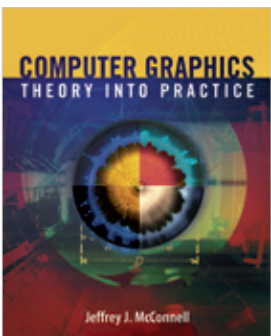
K.E. Vogel

Both from University of New Hampshire at Manchester

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