Semantics With Applications An Appetizer Solution

This engaging textbook provides an accessible introduction to coding and the world of Object-Oriented (OO) programming, using Java as the illustrative programming language. Emphasis is placed on what is most helpful for the first-time coder, in order to develop and understand their knowledge and skills in a way that is relevant and practical. The examples presented in the text demonstrate how skills in OO programming can be used to create applications and programs that have real-world value in daily life. Topics and features: presents an overview of programming and coding, a brief history of programming languages, and a concise introduction to programming in Java using BlueJ; discusses classes and objects, reviews various Java library objects and packages, and introduces the idea of the Application Programming Interface (API); highlights how OO design forms an essential role in producing a useful solution to a problem, and the importance of the concept of class polymorphism; examines what to do when code encounters an error condition, describing the exception handling mechanism and practical measures in defensive coding; investigates the work of arrays and collections, with a particular focus on fixed length arrays, the ArrayList, HashMap and HashSet; describes the basics of building a Graphical User Interface (GUI) using Swing, and the concept of a design pattern; outlines two complete applications, from conceptual design to implementation, illustrating the content covered by the rest of the book; provides code for all examples and projects at an associated website. This concise guide is ideal for the novice approaching OO programming for the first time, whether they are a student of computer science embarking on a one-semester course in this area, or someone learning for the purpose of professional development or self-improvement. The text does not require any prior knowledge of coding, software engineering, OO, or mathematics.

A self-contained introduction to abstract interpretation–based static analysis, an essential resource for students, developers, and users. Static program analysis, or static analysis, aims to discover semantic properties of programs without running them. It plays an important role in all phases of development, including verification of specifications and programs, the synthesis of optimized code, and the refactoring and maintenance of software applications. This book offers a self-contained introduction to static analysis, covering the basics of both theoretical foundations and practical considerations in the use of static analysis tools. By offering a quick and comprehensive introduction for nonspecialists, the book fills a notable gap in the literature, which until now has consisted largely of scientific articles on advanced topics. The text covers the mathematical foundations of static analysis, including semantics, semantic abstraction, and computation of program invariants; more advanced notions and techniques, including techniques for enhancing the cost-accuracy balance of analysis and abstractions for advanced programming features and answering a wide range of semantic questions; and techniques for implementing and using static analysis tools. It begins with background information and an intuitive and informal introduction to the main static analysis principles and techniques. It then formalizes the scientific foundations of program analysis techniques, considers practical aspects of implementation, and presents more advanced applications. The book can be used as a textbook in advanced undergraduate and graduate courses in static analysis and program verification, and as a reference for users, developers, and experts.

This is an edited volume based on the 2007 Conference on Metadata and Semantics Research (MTSR), now in its second meeting. Metadata research is a pluri-disciplinary field that encompasses all aspects of the definition, creation, assessment, management and use of metadata. The volume brings together world class leaders to contribute their research and up-to-date information on metadata and semantics applied to library management, e-commerce, e-business, information science and librarianship, to name a few. The book is designed for a professional audience composed of researchers and practitioners in industry.

This easy-to-follow textbook presents an engaging introduction to the fascinating world of medical image analysis. Avoiding an overly mathematical treatment, the text focuses on intuitive explanations, illustrating the key algorithms and concepts in a way which will make sense to students from a broad range of different backgrounds. Topics and features: explains what light is, and how it can be captured by a camera and converted into an image, as well as how images can be compressed and stored; describes basic image manipulation methods for understanding and improving image quality, and a useful segmentation algorithm; reviews the basic image processing methods for segmenting or enhancing certain features in an image, with a focus on morphology methods for binary images; examines how to detect, describe, and recognize objects in an image, and how the nature of color can be used for segmenting objects; introduces a statistical method to determine what class of object the pixels in an image represent; describes how to change the geometry within an image, how to align two images so that they are as similar as possible, and how to detect lines and paths in images; provides further exercises and other supplementary material at an associated website. This concise and accessible textbook will be invaluable to undergraduate students of computer science, engineering, medicine, and any multi-disciplinary courses that combine topics on health with data science. Medical practitioners working with medical imaging devices will also appreciate this easy-to-understand explanation of the technology.

As more and more vulnerabilities are found in the Mac OS X (Leopard) operating system, security researchers are realizing the importance of developing proof-of-concept exploits for those vulnerabilities. This unique tome is the first book to uncover the flaws in the Mac OS X operating system—and how to deal with them. Written by two white hat hackers, this book is aimed at making vital information known so that you can find ways to secure your Mac OS X systems, and examines the sorts of attacks that are prevented by Leopard’s security defenses, what attacks aren’t, and how to best handle those weaknesses.

This is a book about the meanings of words and how they can combine to form larger meaningful units, as well as how they can fail to combine when the amalgamation of a predicate and argument would produce what the philosopher Gilbert Ryle called a 'category mistake'. It argues for a theory in which words get assigned both an intension and a type. The book develops a rich system of types and investigates its philosophical and formal implications, for example the abandonment of the classic Church analysis of types that has been used by linguists since Montague. The author integrates fascinating and puzzling observations about lexical meaning into a compositional semantic framework. Adjustments in types are a feature of the compositional process and account for various phenomena including coercion and copredication. This book will be of interest to semanticists, philosophers, logicians and computer scientists alike.

Racket is a descendant of Lisp, a programming language renowned for its elegance, power, and challenging learning curve. But while Racket retains the functional goodness of Lisp, it was designed with beginning programmers in mind. Realm of Racket is your introduction to the Racket language. In Realm of Racket, you'll learn to program by creating increasingly complex games. Your journey begins with the Guess My Number game and coverage of some basic Racket etiquette. Next you'll dig into syntax

and semantics, lists, structures, and conditionals, and learn to work with recursion and the GUI as you build the Robot Snake game. After that it's on to lambda and mutant structs (and an Orc Battle), and fancy loops and the Dice of Doom. Finally, you'll explore laziness, AI, distributed games, and the Hungry Henry game. As you progress through the games, chapter checkpoints and challenges help reinforce what you've learned. Offbeat comics keep things fun along the way. As you travel through the Racket realm, you'll: –Master the quirks of Racket's syntax and semantics –Learn to write concise and elegant functional programs –Create a graphical user interface using the 2htdp/image library –Create a server to handle true multiplayer games Realm of Racket is a lighthearted guide to some serious programming. Read it to see why Racketeers have so much fun!

An introductory course on Software Engineering remains one of the hardest subjects to teach largely because of the wide range of topics the area enc- passes. I have believed for some time that we often tend to teach too many concepts and topics in an introductory course resulting in shallow knowledge and little insight on application of these concepts. And Software Engineering is ?nally about application of concepts to e?ciently engineer good software solutions. Goals I believe that an introductory course on Software Engineering should focus on imparting to students the knowledge and skills that are needed to successfully execute a commercial project of a few person-months e?ort while employing proper practices and techniques. It is worth pointing out that a vast majority of the projects executed in the industry today fall in this scope—executed by a small team over a few months. I also believe that by carefully selecting the concepts and topics, we can, in the course of a semester, achieve this. This is the motivation of this book. The goal of this book is to introduce to the students a limited number of concepts and practices which will achieve the following two objectives: – Teach the student the skills needed to execute a smallish commercial project.

Databases Illuminated, 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 in the field. 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. Instructor resources include Microsoft PowerPoint lecture slides, solutions to all the exercises and projects in the text, test bank, and a complete instructor's manual that includes objectives and teaching hints. Student resources include an open access companion website featuring: -downloadable code -projects with step-by-step guidance that ensure students fully understand each step before moving on to the next. -hands-on lab exercises that allow students to apply the concepts learned from the text -additional information not included in the text to allow for further study The integrated, modern approach to databases, combined with strong pedagogical features, accessible writing, and a full package of student and instructor’s resources, makes Databases Illuminated, Second Edition the perfect textbook for courses in this exciting field. New and Key Features of the updated Second Edition: -Covers the new features of the current versions of popular database management systems, including Oracle 11, Access 2010, and InterSystems Cache. -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. The chapter on computer ethics has been updated to take into account new regulations and practices. -Contains more material on recent and relevant topics, such as Web access, JDBC, web programming, XML, data warehousing, data mining, and other emerging database technologies and applications. -Includes the extensive object-relational features of the current release of Oracle, with downloadable code for students to implement; Object-oriented databases are implemented using InterSystems Cache, with downloadable code included on the website.

This accessible and engaging textbook presents a concise introduction to the exciting field of artificial intelligence (AI). The broad-ranging discussion covers the key subdisciplines within the field, describing practical algorithms and concrete applications in the areas of agents, logic, search, reasoning under uncertainty, machine learning, neural networks, and reinforcement learning. Fully revised and updated, this much-anticipated second edition also includes new material on deep learning. Topics and features: presents an application-focused and hands-on approach to learning, with supplementary teaching resources provided at an associated website; contains numerous study exercises and solutions, highlighted examples, definitions, theorems, and illustrative cartoons; includes chapters on predicate logic, PROLOG, heuristic search, probabilistic reasoning, machine learning and data mining, neural networks and reinforcement learning; reports on developments in deep learning, including applications of neural networks to generate creative content such as text, music and art (NEW); examines performance evaluation of clustering algorithms, and presents two practical examples explaining Bayes’ theorem and its relevance in everyday life (NEW); discusses search algorithms, analyzing the cycle check, explaining route planning for car navigation systems, and introducing Monte Carlo Tree Search (NEW); includes a section in the introduction on AI and society, discussing the implications of AI on topics such as employment and transportation (NEW). Ideal for foundation courses or modules on AI, this easy-to-read textbook offers an excellent overview of the field for students of computer science and other technical disciplines, requiring no more than a high-school level of knowledge of mathematics to understand the material.

This textbook on Python 3 explains concepts such as variables and what they represent, how data is held in memory, how a for loop works and what a string is. It also introduces key concepts such as functions, modules and packages as well as object orientation and functional programming. Each section is prefaced with an introductory chapter, before continuing with how these ideas work in Python. Topics such as generators and coroutines are often misunderstood and these are explained in detail, whilst topics such as Referential Transparency, multiple inheritance and exception handling are presented using examples. A Beginners Guide to Python 3 Programming provides all you need to know about Python, with numerous examples provided throughout including several larger worked case studies illustrating the ideas presented in the previous chapters.

Ontology was once understood to be the philosophical inquiry into the structure of reality: the analysis and categorization of ‘what there is’. Recently, however, a field called ‘ontology’ has become part of the rapidly growing research industry in information technology. The two fields have more in common than just their name. Theory and Applications of Ontology is a two-volume anthology that aims to further an informed discussion about the relationship between ontology in philosophy and ontology in information technology. It fills an important lacuna in cutting-edge research on ontology in both fields, supplying stage-setting overview articles on history and method, presenting directions of current research in either field, and highlighting areas of productive interdisciplinary contact. Theory and Applications of Ontology: Computer Applications presents ontology in ways that philosophers are not likely to find elsewhere. The volume offers an overview of current research in ontology, distinguishing basic conceptual issues, domain applications, general frameworks, and mathematical formalisms. It introduces the reader to current research on frameworks and applications in information technology in ways that are sure to invite reflection and constructive responses from ontologists in philosophy.

Semantics with Applications: An AppetizerSpringer

Program analysis utilizes static techniques for computing reliable information about the dynamic behavior of programs. Applications include compilers (for code improvement), software validation (for detecting errors) and transformations between data representation (for solving problems such as Y2K). This book is unique in providing an overview of the four major approaches to program analysis: data flow analysis, constraint-based analysis, abstract interpretation, and type and effect systems. The presentation illustrates the extensive similarities between

the approaches, helping readers to choose the best one to utilize.
This invaluable textbook/reference provides an easy-to-read guide to the fundamentals of formal methods, highlighting the rich applications of formal methods across a diverse range of areas of computing. Topics and features: introduces the key concepts in software engineering, software reliability and dependability, formal methods, and discrete mathematics; presents a short history of logic, from Aristotle's syllogistic logic and the logic of the Stoics, through Boole's symbolic logic, to Frege's work on predicate logic; covers propositional and predicate logic, as well as more advanced topics such as fuzzy logic, temporal logic, intuitionistic logic, undefined values, and the applications of logic to AI; examines the Z specification language, the Vienna Development Method (VDM) and Irish School of VDM, and the unified modelling language (UML); discusses Dijkstra's calculus of weakest preconditions, Hoare's axiomatic semantics of programming languages, and the classical approach of Parnas and his tabular expressions; provides coverage of automata theory, probability and statistics, model checking, and the nature of proof and theorem proving; reviews a selection of tools available to support the formal methodist, and considers the transfer of formal methods to industry; includes review questions and highlights key topics in every chapter, and supplies a helpful glossary at the end of the book. This stimulating guide provides a broad and accessible overview of formal methods for students of computer science and mathematics curious as to how formal methods are applied to the field of computing.
This book is an essential tool for second-year undergraduate students and above, providing clear and concise explanations of the basic concepts of computer graphics, and enabling the reader to immediately implement these concepts in Java 2D and/or 3D with only elementary knowledge of the programming language. Features: provides an ideal, self-contained introduction to computer graphics, with theory and practice presented in integrated combination; presents a practical guide to basic computer graphics programming using Java 2D and 3D; includes new and expanded content on the integration of text in 3D, particle systems, billboard behaviours, dynamic surfaces, the concept of level of detail, and the use of functions of two variables for surface modelling; contains many pedagogical tools, including numerous easy-to-understand example programs and end-of-chapter exercises; supplies useful supplementary material, including additional exercises, solutions, and program examples, at an associated website.
Information modeling and knowledge bases are important technologies for academic and industrial research that goes beyond the traditional borders of information systems and computer science. The amount and complexity of information to be dealt with grows continually, as do the levels of abstraction and the size of databases. This book presents the proceedings of the 30th International Conference on Information Modelling and Knowledge Bases (EJC2020), due to be held in Hamburg, Germany on 8 and 9 June 2020, but instead held as a virtual conference on the same dates due to the Corona-virus pandemic restrictions. The conference provides a research forum for the exchange of scientific results and experiences, and brings together experts from different areas of computer science and other disciplines with a common interest in information modeling and knowledge bases. The subject touches on many disciplines, with philosophy and logic, cognitive science, knowledge management, linguistics and management science, as well as the emerging fields of data science and machine learning, all being relevant areas. The 23 reviewed, selected, and upgraded contributions included here are the result of presentations, comments, and discussions from the conference, and reflect the themes of the conference sessions: learning and linguistics; systems and processes; data and knowledge representation; models and interfaces; formalizations and reasoning; models and modeling; machine learning; models and programming; environment and predictions; modeling emotion; and social networks. The book provides an overview of current research and applications, and will be of interest to all those working in the field.
Thorough coverage of Microsoft's new dynamic programming language: IronPython IronPython is a powerful and vital part of any .NET developer's toolbox, and although it is several years old, very little literature exists on the topic. This essential resource fills that void and provides you with an in-depth understanding of IronPython. A brief introduction walks you through the installation, usage, and tools of IronPython and also explains what makes IronPython different from other programming languages. Coverage quickly moves on to explaining how to use and work with the IronPython language, and an in-depth look at its environment sheds light on how it can be stand alone or with the .NET Framework. You'll see how IronPython can be used to create either desktop or Web-based applications and you'll witness how it interacts with other existing technologies. In addition, coverage of advanced topics shares techniques for extending IronPython and making it a robust language. Provides you with an in-depth look at IronPython, how it is different from other programming languages, what it is capable of, and how to maximize its potential Explores how IronPython interacts with existing technologies and how it can perform administration tasks Answers popular questions, such as how to extend IronPython and make it a more robust language Tackles topics not addressed anywhere else, including executing IronPython using Mono You'll want to devour every topic covered in Professional IronPython so you can get started working with this powerful programming language today.
Part I of this book is a practical introduction to working with the Isabelle proof assistant. It teaches you how to write functional programs and inductive definitions and how to prove properties about them in Isabelle's structured proof language. Part II is an introduction to the semantics of imperative languages with an emphasis on applications like compilers and program analysers. The distinguishing feature is that all the mathematics has been formalised in Isabelle and much of it is executable. Part I focusses on the details of proofs in Isabelle; Part II can be read even without familiarity with Isabelle's proof language, all proofs are described in detail but informally. The book teaches the reader the art of precise logical reasoning and the practical use of a proof assistant as a surgical tool for formal proofs about computer science artefacts. In this sense it represents a formal approach to computer science, not just semantics. The Isabelle formalisation, including the proofs and accompanying slides, are freely available online, and the book is suitable for graduate students, advanced undergraduate students, and researchers in theoretical computer science and logic.
How does the Internet really work? This book explains the technology behind it all, in simple question and answer format.
This practically-focused textbook presents a concise tutorial on data structures and algorithms using the object-functional language Scala. The material builds upon the foundation established in the title Programming with Scala: Language Exploration by the same author, which can be treated as a companion text for those less familiar with Scala. Topics and features: discusses data structures and algorithms in the form of design patterns; covers key topics on arrays, lists, stacks, queues, hash tables, binary trees, sorting, searching, and graphs; describes examples of complete and running

applications for each topic; presents a functional approach to implementations for data structures and algorithms (excepting arrays); provides numerous challenge exercises (with solutions), encouraging the reader to take existing solutions and improve upon them; offers insights from the author’s extensive industrial experience; includes a glossary, and an appendix supplying an overview of discrete mathematics. Highlighting the techniques and skills necessary to quickly derive solutions to applied problems, this accessible text will prove invaluable to time-pressured students and professional software engineers.

Annotation This book constitutes the refereed proceedings of the Third International Conference on Algebraic Informatics, CAI 2009, held in Thessaloniki, Greece, in May 2009. The 16 full papers were carefully reviewed and selected from 25 submissions. The papers cover topics such as algebraic semantics on graph and trees, formal power series, syntactic objects, algebraic picture processing, finite and infinite computations, acceptors and transducers for strings, trees, graphs arrays, etc. decision problems, algebraic characterization of logical theories, process algebra, algebraic algorithms, algebraic coding theory, algebraic aspects of cryptography.

Recent years have seen the development of powerful tools for verifying hardware and software systems, as companies worldwide realise the need for improved means of validating their products. There is increasing demand for training in basic methods in formal reasoning so that students can gain proficiency in logic-based verification methods. The second edition of this successful textbook addresses both those requirements, by continuing to provide a clear introduction to formal reasoning which is both relevant to the needs of modern computer science and rigorous enough for practical application. Improvements to the first edition have been made throughout, with extra and expanded sections on SAT solvers, existential/universal second-order logic, micro-models, programming by contract and total correctness. The coverage of model-checking has been substantially updated. Further exercises have been added. Internet support for the book includes worked solutions for all exercises for teachers, and model solutions to some exercises for students.

Do you know what "quatrefoil" and "impolitic" mean? What about "halcyon" or "narcolepsy"? This book is a handy, easy-to-read reference guide to the proper parlance for any situation. In this book you will find: Words You Absolutely Should Know (covert, exonerate, perimeter); Words You Should Know But Probably Don't (dour, incendiary, scintilla); Words Most People Don't Know (schlimazel, thaumaturgy, epergne); Words You Should Know to Sound Overeducated (ad infinitum, nugatory, garrulity); Words You Probably Shouldn't Know (priapic, damnatory, labia majora); and more. Whether writing an essay, studying for a test, or trying to impress friends, family, and fellow cocktail party guests with their prolixity, you will achieve magniloquence, ebullience, and flights of rhetorical brilliance.

Business Intelligence: The Savvy Managers Guide, Second Edition, discusses the objectives and practices for designing and deploying a business intelligence (BI) program. It looks at the basics of a BI program, from the value of information and the mechanics of planning for success to data model infrastructure, data preparation, data analysis, integration, knowledge discovery, and the actual use of discovered knowledge. Organized into 21 chapters, this book begins with an overview of the kind of knowledge that can be exposed and exploited through the use of BI. It then proceeds with a discussion of information use in the context of how value is created within an organization, how BI can improve the ways of doing business, and organizational preparedness for exploiting the results of a BI program. It also looks at some of the critical factors to be taken into account in the planning and execution of a successful BI program. In addition, the reader is introduced to considerations for developing the BI roadmap, the platforms for analysis such as data warehouses, and the concepts of business metadata. Other chapters focus on data preparation and data discovery, the business rules approach, and data mining techniques and predictive analytics. Finally, emerging technologies such as text analytics and sentiment analysis are considered. This book will be valuable to data management and BI professionals, including senior and middle-level managers, Chief Information Officers and Chief Data Officers, senior business executives and business staff members, database or software engineers, and business analysts. Guides managers through developing, administering, or simply understanding business intelligence technology Keeps pace with the changes in best practices, tools, methods and processes used to transform an organization’s data into actionable knowledge Contains a handy, quick-reference to technologies and terminology

This text examines the goals of data analysis with respect to enhancing knowledge, and identifies data summarization and correlation analysis as the core issues. Data summarization, both quantitative and categorical, is treated within the encoder-decoder paradigm bringing forward a number of mathematically supported insights into the methods and relations between them. Two Chapters describe methods for categorical summarization: partitioning, divisive clustering and separate cluster finding and another explain the methods for quantitative summarization, Principal Component Analysis and PageRank. Features: · An in-depth presentation of K-means partitioning including a corresponding Pythagorean decomposition of the data scatter. · Advice regarding such issues as clustering of categorical and mixed scale data, similarity and network data, interpretation aids, anomalous clusters, the number of clusters, etc. · Thorough attention to data-driven modelling including a number of mathematically stated relations between statistical and geometrical concepts including those between goodness-of-fit criteria for decision trees and data standardization, similarity and consensus clustering, modularity clustering and uniform partitioning. New edition highlights: · Inclusion of ranking issues such as Google PageRank, linear stratification and tied rankings median, consensus clustering, semi-average clustering, one-cluster clustering · Restructured to make the logics more straightforward and sections self-contained Core Data Analysis: Summarization, Correlation and Visualization is aimed at those who are eager to participate in developing the field as well as appealing to novices and practitioners.

This book identifies, defines and illustrates the fundamental concepts and engineering techniques relevant to applications of software languages in software development. It presents software languages primarily from a software engineering perspective, i.e., it addresses how to parse, analyze, transform, generate, format, and otherwise process software artifacts in different software languages, as they appear in software development. To this end, it covers a wide range of software languages – most notably programming languages, domain-specific languages, modeling languages, exchange formats, and specifically also language definition languages. Further, different languages are leveraged to illustrate software language engineering concepts and techniques. The functional programming language Haskell dominates the book, while the mainstream programming languages

Python and Java are additionally used for illustration. By doing this, the book collects and organizes scattered knowledge from software language engineering, focusing on application areas such as software analysis (software reverse engineering), software transformation (software re-engineering), software composition (modularity), and domain-specific languages. It is designed as a textbook for independent study as well as for bachelor's (advanced level) or master's university courses in Computer Science. An additional website provides complementary material, for example, lecture slides and videos. This book is a valuable resource for anyone wanting to understand the fundamental concepts and important engineering principles underlying software languages, allowing them to acquire much of the operational intelligence needed for dealing with software languages in software development practice. This is an important skill set for software engineers, as languages are increasingly permeating software development.
This book is an introduction to the design and implementation of operating systems using OSP 2, the next generation of the highly popular OSP courseware for undergraduate operating system courses. Coverage details process and thread management; memory, resource and I/0 device management; and interprocess communication. The book allows students to practice these skills in a realistic operating systems programming environment. An Instructors Manual details how to use the OSP Project Generator and sample assignments. Even in one semester, students can learn a host of issues in operating system design.
This textbook is the third of three volumes which provide a modern, algorithmic introduction to digital image processing, designed to be used both by learners desiring a firm foundation on which to build, and practitioners in search of critical analysis and concrete implementations of the most important techniques. This volume builds upon the introductory material presented in the first two volumes with additional key concepts and methods in image processing. Features: practical examples and carefully constructed chapter-ending exercises; real implementations, concise mathematical notation, and precise algorithmic descriptions designed for programmers and practitioners; easily adaptable Java code and completely worked-out examples for easy inclusion in existing applications; uses ImageJ; provides a supplementary website with the complete Java source code, test images, and corrections; additional presentation tools for instructors including a complete set of figures, tables, and mathematical elements.
It is commonly assumed that we conceive of the past and the future as symmetrical. In this book, Fabrizio Cariani develops a new theory of future-directed discourse and thought that shows that our linguistic and philosophical conceptions of the past and future are, in fact, fundamentally different. Future thought and talk, Cariani suggests, are best understood in terms of a systematic analogy with counterfactual thought and talk, and are not just mirror images of the past. Cariani makes this case by developing detailed formal semantic theories as well as by advancing less technical views about the nature of future-directed judgment and prediction. His book addresses in a thought-provoking way several important debates in contemporary philosophy, and his synthesis of parallel threads of research will benefit scholars in the philosophy of language, metaphysics, epistemology, linguistics and cognitive science.
Written in a clear, precise and user-friendly style, Logic as a Tool: A Guide to Formal Logical Reasoning is intended for undergraduates in both mathematics and computer science, and will guide them to learn, understand and master the use of classical logic as a tool for doing correct reasoning. It offers a systematic and precise exposition of classical logic with many examples and exercises, and only the necessary minimum of theory. The book explains the grammar, semantics and use of classical logical languages and teaches the reader how grasp the meaning and translate them to and from natural language. It illustrates with extensive examples the use of the most popular deductive systems -- axiomatic systems, semantic tableaux, natural deduction, and resolution -- for formalising and automating logical reasoning both on propositional and on first-order level, and provides the reader with technical skills needed for practical derivations in them. Systematic guidelines are offered on how to perform logically correct and well-structured reasoning using these deductive systems and the reasoning techniques that they employ. •Concise and systematic exposition, with semi-formal but rigorous treatment of the minimum necessary theory, amply illustrated with examples •Emphasis both on conceptual understanding and on developing practical skills •Solid and balanced coverage of syntactic, semantic, and deductive aspects of logic •Includes extensive sets of exercises, many of them provided with solutions or answers •Supplemented by a website including detailed slides, additional exercises and solutions For more information browse the book's website at: https://logicasatool.wordpress.com
Semantics will play an important role in the future development of software systems and domain-specific languages. This book provides a needed introductory presentation of the fundamental ideas behind these approaches, stresses their relationship by formulating and proving the relevant theorems, and illustrates the applications of semantics in computer science. Historically important application areas are presented together with some exciting potential applications. The text investigates the relationship between various methods and describes some of the main ideas used, illustrating these by means of interesting applications. The book provides a rigorous introduction to the main approaches to formal semantics of programming languages.
The first comprehensive presentation of reduction semantics in one volume, and the first tool set for such forms of semantics. This text is the first comprehensive presentation of reduction semantics in one volume; it also introduces the first reliable and easy-to-use tool set for such forms of semantics. Software engineers have long known that automatic tool support is critical for rapid prototyping and modeling, and this book is addressed to the working semantics engineer (graduate student or professional language designer). The book comes with a prototyping tool suite to develop, explore, test, debug, and publish semantic models of programming languages. With PLT Redex, semanticists can formulate models as grammars and reduction models on their computers with the ease of paper and pencil. The text first presents a framework for the formulation of language models, focusing on equational calculi and abstract machines, then introduces PLT Redex, a suite of software tools for expressing these models as PLT Redex models. Finally, experts describe a range of models formulated in Redex. PLT Redex comes with the PLT Scheme implementation, available free at http://www.plt-scheme.org/. Readers can download the software and experiment with Redex as they work their way through the book.
An understanding of logic is essential to computer science. This book provides a highly accessible account of the logical basis required for reasoning about computer programs and applying logic in fields like artificial intelligence. The text contains extended examples, algorithms, and programs written in Standard ML and Prolog. No prior knowledge of either language is required. The book contains a clear account of classical first-order logic, one of the basic tools for program verification, as well as an introductory survey of modal and temporal logics and possible world semantics. An introduction

to intuitionistic logic as a basis for an important style of program specification is also featured in the book.
THE NEW YORK TIMES AND USA TODAY BESTSELLER! The secret to successful word-of-mouth marketing on the social web is easy: BE LIKEABLE. A friend's recommendation is more powerful than any advertisement. In the world of Facebook, Twitter, and beyond, that recommendation can travel farther and faster than ever before. Likeable Social Media helps you harness the power of word-of-mouth marketing to transform your business. Listen to your customers and prospects. Deliver value, excitement, and surprise. And most important, learn how to truly engage your customers and help them spread the word. Praise for Likeable Social Media: Dave Kerpen's insights and clear, how-to instructions on building brand popularity by truly engaging with customers on Facebook, Twitter, and the many other social media platforms are nothing short of brilliant. Jim McCann, founder of 1-800-FLOWERS.COM and Celebrations.com Alas, common sense is not so common. Dave takes you on a (sadly, much needed) guided tour of how to be human in a digital world. Seth Godin, author of Poke the Box Likeable Social Media cuts through the marketing jargon and technical detail to give you what you really need to make sense of this rapidly changing world of digital marketing and communications. Being human — being likeable — will get you far. Scott Monty, Global Digital Communications, Ford Motor Company Dave gives you what you need: Practical, specific how-to advice to get people talking about you. Andy Sernovitz, author of Word of Mouth Marketing: How Smart Companies Get People Talking
The four-volume set LNCS 11244, 11245, 11246, and 11247 constitutes the refereed proceedings of the 8th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation, ISoLA 2018, held in Limassol, Cyprus, in October/November 2018. The papers presented were carefully reviewed and selected for inclusion in the proceedings. Each volume focusses on an individual topic with topical section headings within the volume: Part I, Modeling: Towards a unified view of modeling and programming; X-by-construction, STRESS 2018. Part II, Verification: A broader view on verification: from static to runtime and back; evaluating tools for software verification; statistical model checking; RERS 2018; doctoral symposium. Part III, Distributed Systems: rigorous engineering of collective adaptive systems; verification and validation of distributed systems; and cyber-physical systems engineering. Part IV, Industrial Practice: runtime verification from the theory to the industry practice; formal methods in industrial practice - bridging the gap; reliable smart contracts: state-of-the-art, applications, challenges and future directions; and industrial day.
This textbook is an introduction to the use of formal methods ranging from semantics of key programming constructs to techniques for the analysis and verification of programs. The authors use program graphs as the mechanism for representing the control structure of programs in order to find a balance between generality and conceptual complexity. The early chapters on program graphs and the Guarded Commands language are sufficient introduction for most readers to then enjoy a plug-and-play approach to the remaining chapters. These explain formal methods for analysing the behaviour of programs in various ways ranging from verification, via program analysis and language-based security, to model checking. The remaining chapters present language extensions with procedures and concurrency and cover their semantics. The book is suitable for advanced undergraduate and graduate courses in software development, and the text is supported throughout with exercises of varying grades of difficulty. The authors have developed an online learning environment that allows students to create examples beyond those covered in the main text, and in the book appendices they present programming projects aimed at implementing central parts of the development using the functional language F#.
The discipline of user experience (UX) design has matured into a confident practice and this edition reflects, and in some areas accelerates, that evolution. Technically this is the second edition of The UX Book, but so much of it is new, it is more like a sequel. One of the major positive trends in UX is the continued emphasis on design—a kind of design that highlights the designer’s creative skills and insights and embodies a synthesis of technology with usability, usefulness, aesthetics, and meaningfulness to the user. In this edition a new conceptual top-down design framework is introduced to help readers with this evolution. This entire edition is oriented toward an agile UX lifecycle process, explained in the funnel model of agile UX, as a better match to the now de facto standard agile approach to software engineering. To reflect these trends, even the subtitle of the book is changed to “Agile UX design for a quality user experience . Designed as a how-to-do-it handbook and field guide for UX professionals and a textbook for aspiring students, the book is accompanied by in-class exercises and team projects. The approach is practical rather than formal or theoretical. The primary goal is still to imbue an understanding of what a good user experience is and how to achieve it. To better serve this, processes, methods, and techniques are introduced early to establish process-related concepts as context for discussion in later chapters. Winner of a 2020 Textbook Excellence Award (College) (Texty) from the Textbook and Academic Authors Association A comprehensive textbook for UX/HCI/Interaction Design students readymade for the classroom, complete with instructors’ manual, dedicated web site, sample syllabus, examples, exercises, and lecture slides Features HCI theory, process, practice, and a host of real world stories and contributions from industry luminaries to prepare students for working in the field The only HCI textbook to cover agile methodology, design approaches, and a full, modern suite of classroom material (stemming from tried and tested classroom use by the authors)
This engaging text presents the fundamental mathematics and modelling techniques for computing systems in a novel and light-hearted way, which can be easily followed by students at the very beginning of their university education. Key concepts are taught through a large collection of challenging yet fun mathematical games and logical puzzles that require no prior knowledge about computers. The text begins with intuition and examples as a basis from which precise concepts are then developed; demonstrating how, by working within the confines of a precise structured method, the occurrence of errors in the system can be drastically reduced. Features: demonstrates how game theory provides a paradigm for an intuitive understanding of the nature of computation; contains more than 400 exercises throughout the text, with detailed solutions to half of these presented at the end of the book, together with numerous theorems, definitions and examples;

describes a modelling approach based on state transition systems.