

Computer Science Edition Richard F Gilberg

The essentials of communication for professionals, educators, students, and entrepreneurs, from organizing your thoughts to inspiring your audience and ensuring what you say is remembered. Do you give presentations at meetings? Do you ever have to explain a complicated subject to audiences unfamiliar with your field? Do you make pitches for ideas or products? Do you want to interest a lecture hall of restless students in subjects that you find fascinating? Then you need this book. *Make It Clear* explains how to communicate--how to speak and write to get your ideas across. Written by an MIT professor who taught his students these techniques for more than forty years, the book starts with the basics--finding your voice, organizing your ideas, making sure what you say is remembered, and receiving critiques ("do not ask for brutal honesty")--and goes on to cover such specifics as preparing slides, writing and rewriting, and even choosing a type family.

Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the *Encyclopedia of Software Engineering* cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

This text presents the formal concepts underlying Computer Science. It starts with a wide introduction to Logic with an emphasis on reasoning and proof, with chapters on Program Verification and Prolog. The treatment of computability with Automata and Formal Languages stands out in several ways: it emphasizes the algorithmic nature of the proofs and the reliance on simulations; it stresses the centrality of nondeterminism in generative models and the relationship to deterministic recognition models. The style is appropriate for both undergraduate and graduate classes.

A hands-on book on rudiments of programming, *Programming Techniques through C: A Beginner's Companion* teaches you the techniques of solving problems from simpler ones like finding out the area of a triangle to more involved ones like sorting and searching. The visual approach to solve problems in a step-by-step manner through flowcharts makes it easy for the beginners to solve problems and write programs using the C programming language. The emphasis is on problem solving procedures rather than learning a language." Demonstrating the different roles that logic plays in the disciplines of computer science, mathematics, and philosophy, this concise undergraduate textbook covers select topics from three different areas of logic: proof theory, computability theory, and nonclassical logic. The

book balances accessibility, breadth, and rigor, and is designed so that its materials will fit into a single semester. Its distinctive presentation of traditional logic material will enhance readers' capabilities and mathematical maturity. The proof theory portion presents classical propositional logic and first-order logic using a computer-oriented (resolution) formal system. Linear resolution and its connection to the programming language Prolog are also treated. The computability component offers a machine model and mathematical model for computation, proves the equivalence of the two approaches, and includes famous decision problems unsolvable by an algorithm. The section on nonclassical logic discusses the shortcomings of classical logic in its treatment of implication and an alternate approach that improves upon it: Anderson and Belnap's relevance logic. Applications are included in each section. The material on a four-valued semantics for relevance logic is presented in textbook form for the first time. Aimed at upper-level undergraduates of moderate analytical background, *Three Views of Logic* will be useful in a variety of classroom settings. Gives an exceptionally broad view of logic Treats traditional logic in a modern format Presents relevance logic with applications Provides an ideal text for a variety of one-semester upper-level undergraduate courses

Electrical engineering is a protean profession. Today the field embraces many disciplines that seem far removed from its roots in the telegraph, telephone, electric lamps, motors, and generators. To a remarkable extent, this chronicle of change and growth at a single institution is a capsule history of the discipline and profession of electrical engineering as it developed worldwide. Even when MIT was not leading the way, the department was usually quick to adapt to changing needs, goals, curricula, and research programs. What has remained constant throughout is the dynamic interaction of teaching and research, flexibility of administration, the interconnections with industrial progress and national priorities. The book's text and many photographs introduce readers to the renowned teachers and researchers who are still well known in engineering circles, among them: Vannevar Bush, Harold Hazen, Edward Bowles, Gordon Brown, Harold Edgerton, Ernst Guillemin, Arthur von Hippel, and Jay Forrester. The book covers the department's major areas of activity - electrical power systems, servomechanisms, circuit theory, communication theory, radar and microwaves (developed first at the famed Radiation Laboratory during World War II), insulation and dielectrics, electronics, acoustics, and computation. This rich history of accomplishments shows moreover that years before "Computer Science" was added to the department's name such pioneering results in computation and control as Vannevar Bush's Differential Analyzer, early cybernetic devices and numerically controlled servomechanisms, the Whirlwind computer, and the evolution of time-sharing computation had already been achieved. Karl Wildes has been associated with the Department of Electrical Engineering and Computer Science since the 1920s, and is now Professor Emeritus. Nilo Lindgren, an electrical engineering graduate of MIT and professional scientific and technical journalist for many years, is at present affiliated with the Electric Power Research Institute in Palo Alto, California. The 2014 Asia-Pacific Conference on Computer Science and Applications was held in Shanghai, December 27-28, 2014. These CSAC-2014 proceedings include 105 selected papers, which focus not only on the research of science and technology of computer sciences, but also on the research of applications, aiming at a quick and immediate effect on Computer Science. A Structured Programming Approach First Course in Computer Science with Modula

I have taught a graduate course on the history of the information and communications industry for 20 years. The course shows students how the world has moved from primitive communication to the integrated multi-media situation we are in today. Concentration is on the fields of journalism, telecommunications, broadcasting, and computing. Emphasis is placed on the leaders

of the areas and the political and cultural surroundings that encouraged or discouraged growth of the industry. It is true that technology is a driving force of this industry, but it has been the individual people (characters) impelled by discovery, acceptance and marketability of that technology who have taken the next step to improve communication. The Journalism field started with Gutenberg and early added Ben Franklin, later it got a little yellow with Hearst and Pulitzer. I think Henry Luce started the business of media integration, but Rupert Murdoch certainly keeps it going. The first practical use of electricity was found by Samuel Morse and his telegraph. Bell invented the telephone, or was it Meucci? Theodore Vail invented the Bell System. Broadcasting started with Marconis invention, or was it Teslas? David Sarnoff and William Paley made the medium practical and characters like Edwin R. Morrow, Walter Cronkite and even Oprah Winfrey gave it credibility. Certainly Charles Babbage and Ada Lovelace had something to do with the start of computers, but later scientists Vannevar bush and Jon von Neumann added the electronics. Then UNIVAC convinced Thomas Watson Junior that IBM better start making them. Jobs and Wozniac started the personal computer business, but Bill Gates created the software to make them run. Tim Berners-Lee hooked those computers to a network and then Amazon, eBay, and Google found a way to make money using the result. This book is the story of these people and companies. "Engineering Digital Design" provides the most extensive coverage of any available textbook in digital logic and design. Modern notation combines with a state-of-the-art treatment of the most important subjects in digital design to provide the student with the background needed to enter industry or graduate study at a competitive level. Software programs, including a logic minimizer and a logic simulator, are provided on a CD-ROM and include detailed instructions for use.

Presents an illustrated A-Z encyclopedia containing approximately 600 entries on computer and technology related topics. In mathematics and computer science, an optimisation problem is the problem of finding the best solution from all feasible solutions. Computational optimisation is crucial in many fields of science and technology as well as in finance, business and medicine. This new book presents state-of-the-art research in the field.

Parallel computer architectures are now going to real applications! This fact is demonstrated by the large number of application areas covered in this book (see section on applications of parallel computer architectures). The applications range from image analysis to quantum mechanics and data bases. Still, the use of parallel architectures poses serious problems and requires the development of new techniques and tools. This book is a collection of best papers presented at the first workshop on two major research activities at the Universitiit Erlangen-Niirnberg and Technis che Universitiit Miinchen. At both universities, more than 100 researchers are working in the field of multiprocessor systems and network configurations and methods and tools for parallel systems. Indeed, the German Science Founda tion (Deutsche Forschungsgemeinschaft) has been sponsoring the projects under grant numbers SFB 182 and SFB 342. Research grants in the form of a Sonder forschungsbereich are given to selected German Universities in portions of three years following a thoroughful reviewing process. The overall duration of such a research grant is restricted to 12 years. The initiative at Erlangen-Niirnberg was started in 1987 and has been headed since this time by Prof. Dr. H. Wedekind. Work at TU-Miinchen began in 1990, head of this initiative is Prof. Dr. A. Bode. The authors of this book are grateful to the Deutsche Forschungsgemeinschaft for its continuing support in the field of research on parallel processing. The first section of the book is devoted to hardware aspects of parallel systems.

The 7th edition of the European Conference on Model-Driven Architecture Foundations and Applications (ECMDA-FA 2009) was dedicated to furthering the state of knowledge and fostering the industrialization of Model-Driven Architecture (MDA) and Model-Driven Engineering (MDE). MDA is an initiative proposed by the Object Management Group for platform-generic systems development; MDA is one of a class of approaches under the umbrella of MDE. MDE and MDA promote the use of models in the specification, design, analysis, synthesis, deployment, and evolution of complex software systems. It is a pleasure to be able to introduce the proceedings of ECMDA-FA 2009. ECMDA-FA 2009 addressed various MDA areas including model transformations, modelling language issues, modelling of behavior and time, traceability and scalability, model-based embedded systems engineering, and the application of model-driven development to IT and networking systems. ECMDA-FA 2009 focused on engaging key European and international researchers and practitioners in a dialogue which will result in a stronger, more efficient industry, producing more reliable software on the basis of state-of-the-art research results. ECMDA-FA is a forum for exchanging information, discussing the latest results and arguing about future developments of MDA and MDE. Particularly, it is one of the few venues that engages both leading academic researchers and industry practitioners, with the intent of creating synergies. Software development is being revolutionized. The heavy-weight processes of the 1980s and 1990s are being replaced by light-weight, so called agile processes. Agile processes move the focus of software development back to what really matters: running software. This is only made possible by accepting that software development is a creative job done by, with, and for individual human beings. For this reason, agile software development encourages interaction, communication, and fun. This was the focus of the Fifth International Conference on Extreme Programming and Agile Processes in Software Engineering which took place between June 6 and June 10, 2004 at the conference center in Garmisch-Partenkirchen at the foot of the Bavarian Alps near Munich, Germany. In this way the conference provided a unique forum for industry and academic professionals to discuss their needs and ideas for incorporating Extreme Programming and Agile Methodologies into their professional life under consideration of the human factor. We celebrated this year's conference by reflecting on what we had achieved in the last half decade and we also focused on the challenges we will face in the near future.

This book constitutes the refereed proceedings of the 7th European Conference on Modelling Foundations and Applications, held in Birmingham, UK, in June 2011. The 19 revised full foundations track papers and 5 revised full applications track papers presented were carefully reviewed and selected from 61 submissions; also included are 5 workshop summaries and abstracts of 4 tutorials. The papers are organized in topical sections on model execution, model analysis, methodology, model management, model transformation, variability analysis and ADLs, and domain-specific modeling.

Complexity is an essential property of software systems that increases in a non-linear fashion with the size of the software system. In software engineering, Model Driven Engineering (MDE) aims to alleviate this complexity by utilising models and modelling activities to raise the level of abstraction and to automate the production of artefacts. One specialised technique with this purpose is the model transformation, which allows the automated creation and modification of output models based on input models. As models and model transformations are used in a productive capacity, they underlie the same evolutionary pressure that conventionally build software systems do. Here the tight coupling between model transformations and metamodels becomes problematic, as changing the one often results in the need to check and adapt the other accordingly. This thesis presents an operator-based, stepwise approach to support software architects in the co-evolution of metamodels and model transformations. The approach allows the description of changes done to a metamodel and the automatic or semi-automatic resolution of the impact on related model transformations. Overall the effort needed for co-evolution is reduced.

Driven by the demands of research and the entertainment industry, the techniques of animation are pushed to render increasingly complex objects with ever-greater life-like appearance and motion. This rapid progression of knowledge and technique impacts professional developers, as well as students. Developers must maintain their understanding of conceptual foundations, while their animation tools become ever more complex and specialized. The second edition of Rick Parent's *Computer Animation* is an excellent resource for the designers who must meet this challenge. The first edition established its reputation as the best technically oriented animation text. This new edition focuses on the many recent developments in animation technology, including fluid animation, human figure animation, and soft body animation. The new edition revises and expands coverage of topics such as quaternions, natural phenomenon, facial animation, and inverse kinematics. The book includes up-to-date discussions of Maya scripting and the Maya C++ API, programming on real-time 3D graphics hardware, collision detection, motion capture, and motion capture data processing. New up-to-the-moment coverage of hot topics like real-time 3D graphics, collision detection, fluid and soft-body animation and more! Companion site with animation clips drawn from research & entertainment and code samples Describes the mathematical and algorithmic foundations of animation that provide the animator with a deep understanding and control of technique

The main objective of CSAIT 2013 is to provide a forum for researchers, educators, engineers and government officials involved in the general areas of Computational Sciences and Information Technology to disseminate their latest research results and exchange views on the future research directions of these fields. A medium like this provides an opportunity to the academicians and industrial professionals to exchange and integrate practice of computer science, application of the academic ideas, improve the academic depth. The in-depth discussions on the subject provide an international communication platform for educational technology and scientific research for the world's universities, engineering field experts, professionals and business executives. Based on the ACM model curriculum guidelines, this text covers the fundamentals of computer science required for first year students embarking on a computing degree. Data representation of text, audio, images, and numbers; computer hardware and software, including operating systems and programming languages; data organization topics such as SQL database models - they're all [included]. Progressing from the bits and bytes level to the higher levels of abstraction, this birds-eye view provides the foundation to help you succeed as you continue your studies in programming and other areas in the computer field.-Back cover. This second edition expands upon the solid, practical foundation established in the first edition of the text. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Gilberg and Forouzan's language-independent data structures text enables students to first design algorithms using Pseudocode, and then build them using the C programming language. Written at a level that makes it easy for students to understand, the book de-emphasizes mathematical rigor and provides a practical approach to data structures.

This title includes a number of Open Access chapters. Model-driven engineering (MDE) is the automatic production of software from simplified models of structure and functionality. It mainly involves the automation of the routine and technologically complex programming tasks, thus allowing developers to focus on the true value-adding functionality that the system needs to deliver. This book serves an overview of some of the core topics in MDE. The volume is broken into two sections offering a selection of papers

that helps the reader not only understand the MDE principles and techniques, but also learn from practical examples. Also covered are the following topics: • MDE for software product lines • Formal methods for model transformation correctness • Metamodeling with Eclipse eCore • Metamodeling with UML profiles • Test cases generation This easily accessible reference volume offers a comprehensive guide to this rapidly expanding field. Edited by experienced writers with experience in both research and the practice of software engineering, *Model-Driven Engineering of Information Systems: Principles, Techniques and Practice* is an authoritative and easy-to-use reference, ideal for both researchers in the field and students who wish to gain an overview to this important field of study.

This book constitutes the refereed proceedings of the 6th International Conference on Software Language Engineering, SLE 2013, held in Indianapolis, IN, USA, in October 2013. The 17 technical papers presented together with 2 tool demonstration papers and one keynote were carefully reviewed and selected from 56 submissions. SLE's foremost mission is to encourage, synthesize and organize communication between communities that have traditionally looked at software languages from different and yet complementary perspectives. The papers are organized in topical sections on domain-specific languages; language patterns and evolution; grammars; tools; language analysis; and meta- and megamodelling.

This book's aim is to provide several different kinds of information: a delineation of general metaheuristics methods, a number of state-of-the-art articles from a variety of well-known classical application areas as well as an outlook to modern computational methods in promising new areas. Therefore, this book may equally serve as a textbook in graduate courses for students, as a reference book for people interested in engineering or social sciences, and as a collection of new and promising avenues for researchers working in this field.

Distributed processing has a strong theoretical foundation, but many day-to-day practitioners make limited use of the advantages this theory can give them. The result includes unreliable systems with obscure and intermittent failures, that can cost time, money and in extreme cases, lives. Reliable construction of distributed and concurrent systems must incorporate theory in practice. This book provides a concise presentation of the theory closely linked to the practical realization of these concepts. This highly practical presentation contains all the elements needed for a complete development of a distributed system. The book includes examples from C, Java and Eiffel, and sample code is available online.

In modernity, an individual identity was constituted from civil society, while in a globalized network society, human identity, if it develops at all, must grow from communal resistance. A communal resistance to an abstract conceptualised world, where there is no possibility for perception and experience of power and therefore no possibility for human choice and action, is of utmost importance for the constituting of human choosers and actors. This book therefore sets focus on those human choosers and actors wishing to read and enjoy the papers as they are actually perceiving and experiencing their lives in a diversity of social and cultural contexts. In so doing, the book tries to imagine in what kind of networks humans may choose and act based on the knowledge and empirical evidence presented in the papers. The topics covered in the book include: People and Their Changing

