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Software Engineering

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John Wiley & Sons **A benchmark text on software development and quantitative softwareengineering "We all trust software. All too frequently, this trust ismisplaced. Larry Bernstein has created and applied quantitativetechniques to develop trustworthy software systems. He and C. M.Yuhas have organized this quantitative experience into a book ofgreat value to make software trustworthy for all of us." -Barry Boehm Trustworthy Systems Through Quantitative Software Engineeringproposes a novel, reliability-driven software engineering approach,and discusses human factors in software engineering and how theseaffect team dynamics. This practical approach gives softwareengineering students and professionals a solid foundation inproblem analysis, allowing them to meet customers' changing needsby tailoring their projects to meet specific challenges, andcomplete projects on schedule and within budget. Specifically, it helps developers identify customer requirements,develop software designs, manage a software development team, andevaluate software products to customer specifications. Studentslearn "magic numbers of software engineering," rules of thumb thatshow how to simplify architecture, design, andimplementation. Case histories and exercises clearly present successful softwareengineers' experiences and illustrate potential problems, results,and trade-offs. Also featuring an accompanying Web site withadditional and related material, Trustworthy Systems ThroughQuantitative Software Engineering is a hands-on, project-orientedresource for upper-level software and computer science students,engineers, professional developers, managers, and professionalsinvolved in software engineering projects. An Instructor's Manual presenting detailed solutions to all theproblems in the book is available from the Wiley**

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Engineering Economics of Life Cycle Cost Analysis

CRC Press **Engineering has changed dramatically in the last century. With modern computing systems, instantaneous communication, elimination of low/mid management, increased complexity, and extremely efficient supply chains, all have dramatically affected the responsibilities of engineers at all levels. The future will require cost effective systems that are more secure, interconnected, software centric, and complex. Employees at all levels need to be able to develop accurate cost estimates based upon defensible cost analysis. It is under this backdrop that this book is being written. By presenting the methods, processes, and tools needed to conduct cost analysis, estimation, and management of complex systems, this textbook is the next step beyond basic engineering economics. Features Focuses on systems life cycle costing Includes materials beyond basic engineering economics, such as simulation-based costing Presents cost estimating, analysis, and management from a total ownership cost perspective Offers numerous real-life examples Provides excel based textbook/problems Offers PowerPoint slides, Solutions Manual, and author website with downloadable excel solutions, etc.**

Value-Based Software Engineering

Springer Science & Business Media **The IT community has always struggled with questions concerning the value of an organization's investment in software and hardware. It is the goal of value-based software engineering (VBSE) to develop models and measures of value which are of use for managers, developers and users as they make tradeoff decisions between, for example, quality and cost or functionality and schedule – such decisions must be economically feasible and comprehensible to the stakeholders with differing value perspectives. VBSE has its roots in work on software engineering economics, pioneered by Barry Boehm in the early 1980s. However, the emergence of a wider scope that defines VBSE is more recent. VBSE extends the merely technical ISO software engineering definition with elements not only from economics, but also from cognitive science, finance, management science, behavioral sciences, and decision sciences, giving rise to a truly multi-disciplinary framework. Biffl and his co-editors invited leading researchers and structured their contributions into three parts, following an introduction into the area by Boehm himself. They first detail the foundations of VBSE, followed by a presentation of state-of-the-art methods and techniques. The third part demonstrates the benefits of VBSE through concrete examples and case studies. This book deviates from the more anecdotal style of many management-oriented software engineering books and so appeals particularly to all readers who are interested in solid foundations for high-level aspects of software engineering decision making, i.e., to product or project managers driven by economics and to software engineering researchers and students.**

Software Engineering

New Age International **This Book Is Designed As A Textbook For The First Course In Software Engineering For Undergraduate And Postgraduate Students. This May Also Be Helpful For Software Professionals To Help Them Practice The Software Engineering Concepts.The Second Edition Is An Attempt To Bridge The Gap Between What Is Taught In The Classroom And What Is Practiced In The Industry . The Concepts Are Discussed With The Help Of Real Life Examples And Numerical Problems.This Book Explains The Basic Principles Of Software Engineering In A Clear And Systematic Manner. A Contemporary Approach Is Adopted Throughout The Book. After Introducing The Fundamental Concepts, The Book Presents A Detailed Discussion Of Software Requirements Analysis & Specifications. Various Norms And Models Of Software Project Planning Are Discussed Next, Followed By A Comprehensive Account Of Software Metrics.Suitable Examples, Illustrations, Exercises, Multiple Choice Questions And Answers Are Included Throughout The Book To Facilitate An Easier Understanding Of The Subject.**

Software Engineering Quality Practices

CRC Press **Learn how to attract and keep successful software professionals Software Engineering Quality Practices describes how software engineers and the managers that supervise them can develop quality software in an effective, efficient, and professional manner. This volume conveys practical advice quickly and clearly while avoiding the dogma that surrounds the software profession. It concentrates on what the real requirements of a system are, what constitutes an appropriate solution, and how you can ensure that the realized solution fulfills the desired qualities of relevant stakeholders. The book also discusses how successful organizations attract and keep people who are capable of building high-quality systems. The author succinctly describes the nature and fundamental principles of design and incorporates them into an architectural framework, enabling you to apply the framework to the development of quality software for most applications. The text also analyzes engineering requirements, identifies poor requirements, and demonstrates how bad requirements can be transformed via several important quality practices.**

Software Process Dynamics

John Wiley & Sons **This book is designed for professionals and students in software engineering or information technology who are interested in understanding the dynamics of software development in order to assess and optimize their own process strategies. It explains how simulation of interrelated technical and social factors can provide a**

means for organizations to vastly improve their processes. It is structured for readers to approach the subject from different perspectives, and includes descriptive summaries of the best research and applications.

Software Engineering Economics

Prentice Hall **Software Engineering Economics is an invaluable guide to determining software costs, applying the fundamental concepts of microeconomics to software engineering, and utilizing economic analysis in software engineering decision making.**

Software Engineering and Computer Systems, Part III

Second International Conference, ICSECS 2011, Kuantan, Pahang, Malaysia, June 27-29, 2011, Proceedings, Part III

Springer **This Three-Volume-Set constitutes the refereed proceedings of the Second International Conference on Software Engineering and Computer Systems, ICSECS 2011, held in Kuantan, Malaysia, in June 2011. The 190 revised full papers presented together with invited papers in the three volumes were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on software engineering; network; bioinformatics and e-health; biometrics technologies; Web engineering; neural network; parallel and distributed; e-learning; ontology; image processing; information and data management; engineering; software security; graphics and multimedia; databases; algorithms; signal processing; software design/testing; e- technology; ad hoc networks; social networks; software process modeling; miscellaneous topics in software engineering and computer systems.**

The Requirements Engineering Handbook

Artech House **Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirement's analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work. The book enables professionals to identify the real customer requirements for their projects and control changes and additions to these requirements. This unique resource helps practitioners understand the importance of requirements, leverage effective requirements practices, and better utilize resources. The book also explains how to strengthen interpersonal relationships and communications which are major contributors to project effectiveness. Moreover, analysts find clear examples and checklists to help them implement best practices.**

Case Studies in Reliability and Maintenance

John Wiley & Sons **Introducing a groundbreaking companion book to a bestsellingreliability text Reliability is one of the most important characteristicsdefining the quality of a product or system, both for themanufacturer and the purchaser. One achieves high reliabilitythrough careful monitoring of design, materials and other input,production, quality assurance efforts, ongoing maintenance, and avariety of related decisions and activities. All of these factorsmust be considered in determining the costs of production,purchase, and ownership of a product. Case Studies in Reliability and Maintenance servesas a valuable addition to the current literature on the subject ofreliability by bridging the gap between theory and application.Conceived during the preparation of the editors' earlier work,Reliability: Modeling, Prediction, and Optimization (Wiley, 2000),this new volume features twenty-six actual case studies written bytop experts in their fields, each illustrating exactly howreliability models are applied. A valuable companion book to Reliability: Modeling,Prediction, and Optimization, or any other textbook on thesubject, the book features: Case studies from fields such as aerospace, automotive, mining,electronics, power plants, dikes, computer software, weapons,photocopiers, industrial furnaces, granite building cladding,chemistry, and aircraft engines A logical organization according to the life cycle of a productor system A unified format of discussion enhanced by tools, techniques,and models for drawing one's own conclusions Pertinent exercises for reinforcement of ideas Of equal value to both students of reliability theory as well asprofessionals in industry, Case Studies in Reliability andMaintenance should be required reading for anyone seekingto understand how reliability and maintenance issues can beaddressed and resolved in the real world.**

Soft Computing in Software Engineering

Springer **Soft computing is playing an increasing role in the study of complex systems in science and engineering. There is a large spectrum of successful applications of soft computing in very different applications domains such as aerospace, communication, consumer appliances, electric power systems, process engineering, transportation, and manufacturing automation and robotics. It has taken a while to bring the early ideas of soft computing to an area and a discipline that seems to be more than appropriate for that. Here it is! This book studies SOFT computing in SOFTware engineering environment. The book is HARD in terms of its results. It covers a range of core topics from software engineering that are soft from its very nature: selection of components, software design, software reuse, software cost estimation and software processes. Soft computing differs from conventional (hard) computing in its ability to be**

tolerant of imprecision, uncertainty, partial truth, and approximation. The guiding principle of soft computing is: Exploit the tolerance for imprecision, uncertainty, partial truth, and approximation to achieve tractability, robustness and low solution cost. The role model for soft computing is the human mind. This seems to be a natural fit with software engineering, a human-based development activity based on sound engineering principles. A recent survey by researchers reveals that "Software Engineering research tends to be quite self-contained, not relying on other disciplines for its thinking".

Handbook of Systems Engineering and Management

John Wiley & Sons **The trusted handbook?now in a new edition This newly revised handbook presents a multifaceted view of systems engineering from process and systems management perspectives. It begins with a comprehensive introduction to the subject and provides a brief overview of the thirty-four chapters that follow. This introductory chapter is intended to serve as a "field guide" that indicates why, when, and how to use the material that follows in the handbook. Topical coverage includes: systems engineering life cycles and management; risk management; discovering system requirements; configuration management; cost management; total quality management; reliability, maintainability, and availability; concurrent engineering; standards in systems engineering; system architectures; systems design; systems integration; systematic measurements; human supervisory control; managing organizational and individual decision-making; systems reengineering; project planning; human systems integration; information technology and knowledge management; and more. The handbook is written and edited for systems engineers in industry and government, and to serve as a university reference handbook in systems engineering and management courses. By focusing on systems engineering processes and systems management, the editors have produced a long-lasting handbook that will make a difference in the design of systems of all types that are large in scale and/or scope.**

Software Process Improvement

15th European Conference, EuroSPI 2008, Dublin, Ireland, September 3-5, 2008, Proceedings

Springer Science & Business Media **This textbook is intended for use by SPI (Software Process Improvement) managers and researchers, quality managers, and experienced project and research managers. The papers constitute the research proceedings of the 15th EuroSPI (European So- ware Process Improvement, www.eurospi.net) conference in Dublin, Ireland, 3–5 September 2008. Since the first conference, held in Dublin in 1994, EuroSPI conferences have been held in 1995 in Vienna (Austria), in 1997 in Budapest (Hungary), in 1998 in Goth- burg (Sweden), in 1999 in Pori (Finland), in 2000 in Copenhagen (Denmark), in 2001 in Limerick (Ireland), in 2002 in Nuremberg (Germany), in 2003 in Graz (Austria), in 2004 in Trondheim (Norway), in 2005 in Budapest (Hungary), in 2006 in Joensuu (Finland), and in 2007 in Potsdam (Germany). EuroSPI has established an experience library (library.eurospi.net), which will be c- tinuously extended over the next few years and was made available to all attendees. EuroSPI has also started an umbrella initiative for establishing a European Quali- cation Network in which different SPINs and national ventures can join mutually beneficial collaborations (EQN - EU Leonardo da Vinci network project). With a general assembly on 15.-16.10.2007 through EuroSPI partners and n- works, in collaboration with the European Union (supported by the EU Leonardo da Vinci Programme), a European certification association has been created (www.- certificates.org) for the IT and services sector to offer SPI knowledge and certificates to industry, establishing close knowledge transfer links between research and industry.**

Improving Software Development Productivity

Effective Leadership and Quantitative Methods in Software Management

Pearson Education **In Improving Software Development Productivity, legendary software engineering expert Dr. Randall Jensen introduces a proven quantitative approach to achieving high productivity through management support, the ability to communicate, and technology. Jensen demonstrates how to measure organizational capacity and productivity, and use that information to build more accurate estimates and schedules -- and, more broadly, to improve many facets of developer and team performance. Students will learn to quantitatively predict the productivity impact of management decisions related to personnel and management style, development environment, product constraints, technology, development systems, and more.**

Making Globally Distributed Software Development a

Success Story

International Conference on Software Process, ICSP 2008 Leipzig, Germany, May 10-11, 2008, Proceedings

Springer Science & Business Media **This book constitutes the refereed proceedings of the Second International Conference on Software Process, held in Leipzig, Germany, in May 2008 - colocated with ICSE 2008, the 30th International Conference on Software Engineering. The 33 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 106 submissions. The papers are organized in topical sections on process content, process tools and metrics, process management, process representation, analysis and modeling, experience report, and simulation modeling.**

Architecting Software Intensive Systems

A Practitioners Guide

CRC Press **Architectural design is a crucial first step in developing complex software intensive systems. Early design decisions establish the structures necessary for achieving broad systemic properties. However, today's organizations lack synergy between software their development processes and technological methodologies. Providing a thorough treatment of**

Systems Engineering

Practice and Theory

BoD – Books on Demand **The book "Systems Engineering: Practice and Theory" is a collection of articles written by developers and researches from all around the globe. Mostly they present methodologies for separate Systems Engineering processes; others consider issues of adjacent knowledge areas and sub-areas that significantly contribute to systems development, operation, and maintenance. Case studies include aircraft, spacecrafts, and space systems development, post-analysis of data collected during operation of large systems etc. Important issues related to "bottlenecks" of Systems Engineering, such as complexity, reliability, and safety of different kinds of systems, creation, operation and maintenance of services, system-human communication, and management tasks done during system projects are addressed in the collection. This book is for people who are interested in the modern state of the Systems Engineering knowledge area and for systems engineers involved in different activities of the area. Some articles may be a valuable source for university lecturers and students; most of case studies can be directly used in Systems Engineering courses as illustrative materials.**

Extreme Programming and Agile Processes in Software Engineering

4th International Conference, XP 2003, Genova, Italy, May 25-29, 2003, Proceedings

Springer Science & Business Media **The LNCS series reports state-of-the-art results in computer science research, development, and education, at a high level and in both printed and electronic form. Enjoying tight cooperation with the R & D community, with numerous individuals, as well as with prestigious organizations and societies, LNCS has grown into the most comprehensive computer science research forum available. The scope of LNCS, including its subseries LNAI, spans the whole range of computer science and information technology including interdisciplinary topics in a variety of application fields. Book jacket.**

Bio-Inspired Models of Network, Information, and Computing Systems

5th International ICST Conference, BIONETICS 2010, Boston

Springer **This book constitutes the thoroughly refereed post-conference proceedings of the 5th International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2010) which was held in Boston, USA, in December 2010. The 78 revised full papers were carefully reviewed and selected from numerous submissions for inclusion in the proceedings. BIONETICS 2010 aimed to provide the understanding of the fundamental principles and design strategies in biological systems and leverage those understandings to build bio-inspired systems.**

Intelligent Computing and Information Science

International Conference, ICICIS 2011, Chongqing, China, January 8-9, 2011. Proceedings, Part I

Springer **This two-volume set (CCIS 134 and CCIS 135) constitutes the refereed proceedings of the International Conference on Intelligent Computing and Information Science, ICICIS2011, held in Chongqing, China, in January 2011. The 226 revised full papers presented in both volumes, CCIS 134 and CCIS 135, were carefully reviewed and selected from over 600 initial submissions. The papers provide the reader with a broad overview of the latest advances in the field of intelligent computing and information science.**

New Trends in Intelligent Software Methodologies, Tools and Techniques

Proceedings of the 17th International Conference SoMeT_18

IOS Press **Knowledge-based systems, fully integrated with software, have become essential enablers for both science and commerce. But current software methodologies, tools and techniques are not robust or reliable enough for the demands of a constantly changing and evolving market, and many promising approaches have proved to be no more than case-oriented methods that are not fully automated. This book presents the proceedings of the 17th international conference on New Trends in Intelligent Software Methodology, Tools and Techniques (SoMeT18) held in Granada, Spain, 26-28 September 2018. The SoMeT conferences provide a forum for the exchange of ideas and experience, foster new directions in software development methodologies and related tools and techniques, and focus on exploring innovations, controversies, and the current challenges facing the software engineering community. The 80 selected papers included here are divided into 13 chapters, and cover subjects as diverse as intelligent software systems; medical informatics and bioinformatics; artificial intelligence techniques; social learning software and sentiment analysis; cognitive systems and neural analytics; and security, among other things. Offering a state-of-the-art overview of methodologies, tools and techniques, this book will be of interest to all those whose work involves the development or application of software.**

Getting Results from Software Development Teams

Microsoft Press **Learn best practices for software development project management—and lead your teams and projects to success. Dr. Lawrence Peters is an industry-recognized expert with decades of experience conducting research and leading real-world software projects. Beyond getting the best developers, equipment, budget, and timeline possible—Peters concludes that no factor is more critical to project success than the manager's role. Drawing on proven practices from allied industries such as business, psychology, accounting, and law, he describes a broader project-management methodology—with principles that software managers can readily adapt to help increase their own effectiveness and the productivity of their teams. Unlike other books on the topic, this book focuses squarely on the manager—and shows how to get results without adopting philosophies from Genghis Khan or Machiavelli. (There is mention of Godzilla, however.) Packed with real-world examples and pragmatic advice, this book shows any software development manager—new or experienced—how to lead teams in delivering the right results for their business.**

Process Simulation and Parametric Modeling for

Strategic Project Management

Springer Science & Business Media **Process Simulation and Parametric Modeling for Strategic Project Management will offer CIOs, CTOs and Software Development Managers, IT Graduate Students an introduction to a set of technologies that will help them understand how to better plan software development projects, manage risk and have better insight into the complexities of the software development process. A novel methodology will be introduced that allows a software development manager to better plan and access risks in the early planning of a project. By providing a better model for early software development estimation and software development, managers will be better equipped to make more effective project portfolio investment choices. Moreover, the methodology will allow the software development manager to continually simulate scenarios throughout the lifecycle of the project and determine plausible alternatives before the risk becomes a reality.**

International Conference on Computer Applications 2012 :: Volume 05

TECHNO FORUM R&D CENTRE

Handbook of Military and Defense Operations Research

CRC Press **Operations research (OR) is a core discipline in military and defense management. Coming to the forefront initially during World War II, OR provided critical contributions to logistics, supply chains, and strategic simulation, while enabling superior decision-making for Allied forces. OR has grown to include analytics and many applications, including artificial intelligence, cybersecurity, and big data, and is the cornerstone of management science in manufacturing, marketing, telecommunications, and many other fields. The Handbook of Military and Defense Operations Research presents the voices leading OR and analytics to new heights in security through research, practical applications, case studies, and lessons learned in the field. Features Applies the experiences of educators and practitioners working in the field Employs the latest technology developments in case studies and applications Identifies best practices unique to the military, security, and national defense problem space Highlights similarities and dichotomies between analyses and trends that are unique to military, security, and defense problems**

Software Management

John Wiley & Sons **This Seventh Edition of Donald Reifer's popular, bestselling tutorial summarizes what software project managers need to know to be successful on the job. The text provides pointers and approaches to deal with the issues, challenges, and experiences that shape their thoughts and performance. To accomplish its goals, the volume explores recent advances in dissimilar fields such as management theory, acquisition management, globalization, knowledge management, licensing, motivation theory, process improvement, organization dynamics, subcontract management, and technology transfer. Software Management provides software managers at all levels of the organization with the information they need to know to develop their software engineering management strategies for now and the future. The book provides insight into management tools and techniques that work in practice. It also provides sufficient instructional materials to serve as a text for a course in software management. This new edition achieves a balance between theory and practical experience. Reifer systematically addresses the skills, knowledge, and abilities that software managers, at any level of experience, need to have to practice their profession effectively. This book contains original articles by leaders in the software management field written specifically for this tutorial, as well as a collection of applicable reprints. About forty percent of the material in this edition has been produced specifically for the tutorial. Contents: * Introduction * Life Cycle Models * Process Improvement * Project Management * Planning Fundamentals * Software Estimating * Organizing for Success * Staffing Essentials * Direction Advice * Visibility and Control * Software Risk Management * Metrics and Measurement * Acquisition Management * Emerging Management Topics "The challenges faced by software project managers are the gap between what the customers can envision and the reality on the ground and how to deal with the risks associated with this gap in delivering a product that meets requirements on time and schedule at the target costs. This tutorial hits the mark by providing project managers, practitioners, and educators with source materials on how project managers can effectively deal with this risk." -Dr. Kenneth E. Nidiffer, Systems & Software Consortium, Inc. "The volume has evolved into a solid set of foundation works for anyone trying to practice software management in a world that is increasingly dependent on software release quality, timeliness, and productivity." -Walker Royce, Vice President, IBM Software Services-Rational**

Software Engineering

A Methodical Approach

Apress **This text provides a comprehensive, but concise introduction to software engineering. It adopts a methodical approach to solving software engineering problems proven over several years of teaching, with outstanding results. The book covers concepts, principles, design, construction, implementation, and management issues of software**

systems. Each chapter is organized systematically into brief, reader-friendly sections, with itemization of the important points to be remembered. Diagrams and illustrations also sum up the salient points to enhance learning. Additionally, the book includes a number of the author's original methodologies that add clarity and creativity to the software engineering experience, while making a novel contribution to the discipline. Upholding his aim for brevity, comprehensive coverage, and relevance, Foster's practical and methodical discussion style gets straight to the salient issues, and avoids unnecessary topics and minimizes theoretical coverage.

Information Reuse and Integration in Academia and Industry

Springer Science & Business Media **The present work covers the latest developments and discoveries related to information reuse and integration in academia and industrial settings. The need for dealing with the large volumes of data being produced and stored in the last decades and the numerous systems developed to deal with these is increasingly necessary. Not all these developments could have been achieved without the investing large amounts of resources. Over time, new data sources evolve and data integration continues to be an essential and vital requirement. Furthermore, systems and products need to be revised to adapt new technologies and needs. Instead of building these from scratch, researchers in the academia and industry have realized the benefits of reusing existing components that have been well tested. While this trend avoids reinventing the wheel, it comes at the cost of finding the optimum set of existing components to be utilized and how they should be integrated together and with the new non-existing components which are to be developed. These nontrivial tasks have led to challenging research problems in the academia and industry. These issues are addressed in this book, which is intended to be a unique resource for researchers, developers and practitioners.**

The Incremental Commitment Spiral Model

Principles and Practices for Successful Systems and Software

Addison-Wesley Professional **"The title makes a huge promise: a way to divide commitment into increments that are both meetable (good news for developers) and meaningful (good news for managers and stakeholders). And the book makes good on that promise." –Tom DeMarco, Principal, The Atlantic Systems Guild, author of Peopleware, Deadline, and Slack "I am seriously impressed with this ICSM book. Besides being conceptually sound, I was amazed by the sheer number of clear and concise characterizations of issues, relationships, and solutions. I wanted to take a yellow highlighter to it until I realized I'd be highlighting most of the book." –Curt Hibbs, Chief Agile Evangelist, Boeing Use the ICSM to Generate and Evolve Your Life-Cycle Process Assets to Best Fit Your Organization's Diverse and Changing Needs Many systems development practitioners find traditional "one-size-fits-all" processes inadequate for the growing complexity, diversity, dynamism, and assurance needs of their products and services. The Incremental Commitment Spiral Model (ICSM) responds with a principle- and risk-based framework for defining and evolving your project and corporate process assets, avoiding pitfalls and disruption, and leveraging opportunities to increase value. This book explains ICSM's framework of decision criteria and principles, and shows how to apply them through relevant examples. It demonstrates ICSM's potential for reducing rework and technical debt, improving maintainability, handling emergent requirements, and raising assurance levels. Its coverage includes What makes a system development successful ICSM's goals, principles, and usage as a process-generation framework Creating and evolving processes to match your risks and opportunities Integrating your current practices and adopting ICSM concepts incrementally, focusing on your greatest needs and opportunities About the Website: Download the evolving ICSM guidelines, subprocesses, templates, tools, white papers, and academic support resources at csse.usc.edu/ICSM.**

Information Systems Outsourcing

Enduring Themes, Emergent Patterns and Future Directions

Springer Science & Business Media **This book attempts to synthesize what is known about information systems (IS) outsourcing by dividing the subject into six interrelated parts. It contains an excellent collection of high-quality articles on information systems outsourcing and examples of successful outsourcing in organizations through empirical surveys and case studies. It also offers new insights into hot topics such as information technology offshoring.**

Software Engineering Handbook

CRC Press **Unfortunately, much of what has been written about software engineering comes from an academic perspective which does not always address the everyday concerns that software developers and managers face. With decreasing software budgets and increasing demands from users and senior management, technology directors need a complete guide to the subject**

Software Engineering

A Methodical Approach, 2nd Edition

CRC Press **Software Engineering: A Methodical Approach (Second Edition) provides a comprehensive, but concise introduction to software engineering. It adopts a methodical approach to solving software engineering problems, proven over several years of teaching, with outstanding results. The book covers concepts, principles, design, construction, implementation, and management issues of software engineering. Each chapter is organized systematically into brief, reader-friendly sections, with itemization of the important points to be remembered. Diagrams and illustrations also sum up the salient points to enhance learning. Additionally, the book includes the author's original methodologies that add clarity and creativity to the software engineering experience. New in the Second Edition are chapters on software engineering projects, management support systems, software engineering frameworks and patterns as a significant building block for the design and construction of contemporary software systems, and emerging software engineering frontiers. The text starts with an introduction of software engineering and the role of the software engineer. The following chapters examine in-depth software analysis, design, development, implementation, and management. Covering object-oriented methodologies and the principles of object-oriented information engineering, the book reinforces an object-oriented approach to the early phases of the software development life cycle. It covers various diagramming techniques and emphasizes object classification and object behavior. The text features comprehensive treatments of: Project management aids that are commonly used in software engineering An overview of the software design phase, including a discussion of the software design process, design strategies, architectural design, interface design, database design, and design and development standards User interface design Operations design Design considerations including system catalog, product documentation, user message management, design for real-time software, design for reuse, system security, and the agile effect Human resource management from a software engineering perspective Software economics Software implementation issues that range from operating environments to the marketing of software Software maintenance, legacy systems, and re-engineering This textbook can be used as a one-semester or two-semester course in software engineering, augmented with an appropriate CASE or RAD tool. It emphasizes a practical, methodical approach to software engineering, avoiding an overkill of theoretical calculations where possible. The primary objective is to help students gain a solid grasp of the activities in the software development life cycle to be confident about taking on new software engineering projects.**

A Platform-Centric Approach to System-on-Chip (SOC) Design

Springer Science & Business Media **Increasing system complexity has created a pressing need for better design tools and associated methodologies and languages for meeting the stringent time to market and cost constraints. Platform-centric and platfo- based system-on-chip (SoC) design methodologies, based on reuse of software and hardware functionality, has also gained increasing exposure and usage within the Electronic System-Level (ESL) design communities. The book proposes a new methodology for realizing platform-centric design of complex systems, and presents a detailed plan for its implementation. The proposed plan allows component vendors, system integrators and product developers to collaborate effectively and efficiently to create complex products within budget and schedule constraints. This book focuses more on the use of platforms in the design of products, and not on the design of platforms themselves. Platform-centric design is not for everyone, as some may feel that it does not allow them to differentiate their offering from competitors to a significant degree. However, its proponents may claim that the time--market and cost advantages of platform-centric design more than compensate for any drawbacks.**

The Making of Information Systems

Software Engineering and Management in a Globalized World

Springer Science & Business Media **Information systems (IS) are the backbone of any organization today, supporting all major business processes. This book deals with the question: how do these systems come into existence? It gives a**

comprehensive coverage of managerial, methodological and technological aspects including: Management decisions before and during IS development, acquisition and implementation Project management Requirements engineering and design using UML Implementation, testing and customization Software architecture and platforms Tool support (CASE tools, IDEs, collaboration tools) The book takes into account that for most organizations today, inhouse development is only one of several options to obtain an IS. A good deal of IS development has moved to software vendors - be it domestic, offshore or multinational software firms. Since an increasing share of this work is done in Asia, Eastern Europe, Latin America and Africa, the making of information systems is discussed within a global context.

Making Software

What Really Works, and Why We Believe It

"O'Reilly Media, Inc." **Many claims are made about how certain tools, technologies, and practices improve software development. But which claims are verifiable, and which are merely wishful thinking? In this book, leading thinkers such as Steve McConnell, Barry Boehm, and Barbara Kitchenham offer essays that uncover the truth and unmask myths commonly held among the software development community. Their insights may surprise you. Are some programmers really ten times more productive than others? Does writing tests first help you develop better code faster? Can code metrics predict the number of bugs in a piece of software? Do design patterns actually make better software? What effect does personality have on pair programming? What matters more: how far apart people are geographically, or how far apart they are in the org chart? Contributors include: Jorge Aranda Tom Ball Victor R. Basili Andrew Begel Christian Bird Barry Boehm Marcelo Cataldo Steven Clarke Jason Cohen Robert DeLine Madeline Diep Hakan Erdogmus Michael Godfrey Mark Guzdial Jo E. Hannay Ahmed E. Hassan Israel Herraiz Kim Sebastian Herzig Cory Kapser Barbara Kitchenham Andrew Ko Lucas Layman Steve McConnell Tim Menzies Gail Murphy Nachi Nagappan Thomas J. Ostrand Dewayne Perry Marian Petre Lutz Prechelt Rahul Premraj Forrest Shull Beth Simon Diomidis Spinellis Neil Thomas Walter Tichy Burak Turhan Elaine J. Weyuker Michele A. Whitecraft Laurie Williams Wendy M. Williams Andreas Zeller Thomas Zimmermann**

Enterprise Information Systems

10th International Conference, ICEIS 2008, Barcelona, Spain, June 12-16, 2008, Revised Selected Papers

Springer Science & Business Media **This book contains the best papers of the 10th International Conference on Enterprise Information Systems (ICEIS 2008), held in the city of Barcelona (Spain), organized by the Institute for Systems and Technologies of Information, Control and Com- nication (INSTICC) in cooperation with AAAI and co-sponsored by WfMC. ICEIS has become a major point of contact between research scientists, engineers and practitioners in the area of business applications of information systems. This year, five simultaneous tracks were held, covering different aspects related to enterprise computing, including: "Databases and Information Systems Integration," "Artificial Intelligence and Decision Support Systems," "Information Systems Analysis and Specification," "Software Agents and Internet Computing" and "Human-Computer Interaction." All tracks focused on real-world applications and highlighted the benefits of information systems and technology for industry and services, thus making a bridge between academia and enterprise. Following the success of 2007, ICEIS 2008 received 665 paper submissions from more than 40 countries. In all, 62 papers were published and presented as full papers, i.e., completed work (8 pages in proceedings / 30-min oral presentations), and 183 papers, reflecting work-in-progress or position papers, were accepted for short pr- entation and another 161 for poster presentation.**

Practical Software Estimation

Function Point Methods for Insourced and Outsourced Projects

Pearson Education **"A clearly written book that is a useful primer for a very complicated set of topics." --Capers Jones, Chief Scientist Emeritus, Software Productivity Research LLC Practical Software Estimation brings together today's most valuable tips, techniques, and best practices for accurately estimating software project efforts, costs, and schedules. Written by a leading expert in the field, it addresses the full spectrum of real-world challenges faced by those who must develop reliable estimates. M. A. Parthasarathy draws on the immense experience of Infosys, one of the world's largest and most respected providers of IT-enabled business solutions, to bring you the only book with detailed guidance on estimating insourced and outsourced software projects, as well as projects that blend both approaches. He demonstrates how to successfully utilize Function Point (FP) methods, the industry's leading estimation model. Then, using real case studies, he systematically identifies pitfalls that can lead to inaccurate**

estimates--and offers proven solutions. Coverage includes How to estimate all types of software projects, including "fresh" development, reengineering, and maintenance How to incorporate the impact of core project elements on estimates: scope, environment, experience, and tools FP analysis from start to finish: data and transaction functions, general system characteristics, and more FP methods for any platform or business function Innovative re-estimation methods to track progress How to quote RFPs and prepare contracts: fixed price, time/material, and project execution lifecycle models Alternatives to FP: Delphi, COCOMO II, and COSMIC-FFP How to choose the right estimation tools Practical Software Estimation is the definitive reference for anyone who must estimate software projects accurately: project and IT managers, individual developers, system designers, architects, executives, consultants, and outsourcers alike. List of Figures List of Tables Foreword Preface Acknowledgments Chapter 1: Introduction Chapter 2: Role of Estimation in Software Projects Chapter 3: A Study of Function Point Analysis Chapter 4: Data Functions Chapter 5: Transactional Functions Chapter 6: General System Characteristics Chapter 7: Size, Effort, and Scheduling of Projects Chapter 8: Estimation Flavors Chapter 9: A Sense of Where You Are Chapter 10: Tips, Tricks, and Traps Chapter 11: Insourcing versus Outsourcing Chapter 12: Key Factors in Software Contracts Chapter 13: Project Estimation and Costing Chapter 14: Other Estimation Methods Chapter 15: Estimation Tools Chapter 16: Estimation Case Study Appendix A: Reference Tables: Transaction Function Counts Appendix B: Reference Tables: Data Function Points Bibliography Index