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Occupational Outlook Handbook

Software Engineering for Internet Applications

Mit Press After completing this self-contained course on server-based Internet applications software that grew out of an MIT course, students who start with only the knowledge of how to write and debug a computer program will have learned how to build sophisticated Web-based applications.

Computer, Network, Software, and Hardware Engineering with Applications

John Wiley & Sons There are many books on computers, networks, and software engineering but none that integrate the three with applications. Integration is important because, increasingly, software dominates the performance, reliability, maintainability, and availability of complex computer and systems. Books on software engineering typically portray software as if it exists in a vacuum with no relationship to the wider system. This is wrong because a system is more than software. It is comprised of people, organizations, processes, hardware, and software. All of these components must be considered in an integrative fashion when designing systems. On the other hand, books on computers and networks do not demonstrate a deep understanding of the intricacies of developing software. In this book you will learn, for example, how to quantitatively analyze the performance, reliability, maintainability, and availability of computers, networks, and software in relation to the total system. Furthermore, you will learn how to evaluate and mitigate the risk of deploying integrated systems. You will learn how to apply many models dealing with the optimization of systems. Numerous quantitative examples are provided to help you understand and interpret model results. This book can be used as a first year graduate course in computer, network, and software engineering; as an on-the-job reference for computer, network, and software engineers; and as a reference for these disciplines.

Software Engineering for Modern Web Applications: Methodologies and Technologies

Methodologies and Technologies

IGI Global "This book presents current, effective software engineering methods for the design and development of modern Web-based applications"--Provided by publisher.

Software Engineering for Agile Application Development

IGI Global As the software industry continues to evolve, professionals are continually searching for practices that can assist with the various problems and challenges in information technology (IT). Agile development has become a popular method of research in recent years due to its focus on adapting to change. There are many factors that play into this process, so success is no guarantee. However,

combining agile development with other software engineering practices could lead to a high rate of success in problems that arise during the maintenance and development of computing technologies. Software Engineering for Agile Application Development is a collection of innovative research on the methods and implementation of adaptation practices in software development that improve the quality and performance of IT products. The presented materials combine theories from current empirical research results as well as practical experiences from real projects that provide insights into incorporating agile qualities into the architecture of the software so that the product adapts to changes and is easy to maintain. While highlighting topics including continuous integration, configuration management, and business modeling, this book is ideally designed for software engineers, software developers, engineers, project managers, IT specialists, data scientists, computer science professionals, researchers, students, and academics.

Graph Transformation for Software Engineers With Applications to Model-Based Development and Domain-Specific Language Engineering

Springer Nature This book is an introduction to graph transformation as a foundation to model-based software engineering at the level of both individual systems and domain-specific modelling languages. The first part of the book presents the fundamentals in a precise, yet largely informal way. Besides serving as prerequisite for describing the applications in the second part, it also provides a comprehensive and systematic survey of the concepts, notations and techniques of graph transformation. The second part presents and discusses a range of applications to both model-based software engineering and domain-specific language engineering. The variety of these applications demonstrates how broadly graphs and graph transformations can be used to model, analyse and implement complex software systems and languages. This is the first textbook that explains the most commonly used concepts, notations, techniques and applications of graph transformation without focusing on one particular mathematical representation or implementation approach. Emphasising the research and engineering methodologies used, it will be a valuable resource for graduate students, practitioners and researchers in software engineering, foundations of programming and formal methods.

Integration of Software Specification Techniques for Applications in Engineering Priority Program SoftSpez of the German Research Foundation (DFG). Final Report

Springer Science & Business Media This book constitutes the documentation of the scientific outcome of the priority program Integration of Software Specification Techniques for Applications in Engineering sponsored by the German Research Foundation (DFG). It includes main contributions of the projects of the priority program and of additional international experts in the field. Some of the papers included were presented at the related Third International Workshop on the topic, INT 2004, held in Barcelona, Spain in March 2004. The 25 revised full papers presented together with 6 section introductions by the volume editors were carefully reviewed and selected for inclusion in the book. The papers are organized in topical sections on reference case study production automation, reference case study traffic control systems, petri nets and related approaches in engineering, charts, verification, and integration modeling.

Software Engineering Application in Informatics

Proceedings of 5th Computational Methods in Systems and Software 2021, Vol. 1

Springer Nature This book constitutes the first part of refereed proceedings of the 5th Computational Methods in Systems and Software 2021 (CoMeSySo 2021). The CoMeSySo 2021 Conference is breaking the barriers, being held online. CoMeSySo 2021 intends to provide an international forum for the discussion of the latest high-quality research results. The software engineering, computer science, and artificial intelligence are crucial topics for the research within an intelligent systems problem domain.

Software Engineering Processes

Principles and Applications

CRC Press Software engineering is playing an increasingly significant role in computing and informatics, necessitated by the complexities inherent in large-scale software development. To deal with these difficulties, the conventional life-cycle approaches to software engineering are now giving way to the "process system" approach, encompassing development methods, infrastructure, organization, and management. Until now, however, no book fully addressed process-based software engineering or set forth a fundamental theory and framework of software engineering processes. Software Engineering Processes: Principles and Applications does just that. Within a unified framework, this book presents a comparative analysis of current process models and formally describes their algorithms. It systematically enables comparison between current models, avoidance of ambiguity in application, and simplification of manipulation for practitioners. The authors address a broad range of topics within process-based software engineering and the fundamental theories and philosophies behind them. They develop a software engineering process reference model (SEPRM) to show how to solve the problems of different process domains, orientations, structures, taxonomies, and methods. They derive a set of process benchmarks-based on a series of international surveys-that support validation of the SEPRM model. Based on their SEPRM model and the unified process theory, they demonstrate that current process models can be integrated and their assessment results can be transformed between each other. Software development is no longer just a black art or laboratory activity. It is an industrialized process that requires the skills not just of programmers, but of organization and project managers and quality assurance specialists. Software Engineering Processes: Principles and Applications is the key to understanding, using, and improving upon effective engineering procedures for software development.

Bioinformatics Software Engineering

Delivering Effective Applications

John Wiley & Sons Bioinformatics Software Engineering: Delivering Effective Applications will be useful to anyone who wants to understand how successful software can be developed in a rapidly changing environment. A handbook, not a textbook, it is not tied to any particular operating system, platform, language, or methodology. Instead it focuses on principles and practices that have been proven in the real world. It is pragmatic, emphasizing the importance of what the author calls Adaptive Programming - doing what works in your situation, and it is concise, covering the whole software development lifecycle in one slim volume. At each stage, it describes common pitfalls, explains how these can be avoided, and suggests simple techniques which make it easier to deliver better solutions. "Well thought-out ... addresses many of the key issues facing developers of bioinformatics software." (Simon Dear, Director, UK Technology and Development, Bioinformatics Engineering and Integration, Genetics Research, GlaxoSmithKline) Here are some examples from the book itself. On software development: "Writing software properly involves talking to people - often lots of people - and plenty of non-coding work on your part. It requires the ability to dream up new solutions to problems so complicated that they are hard to describe." From description to specification: "Look for verbs - action words, such as 'does', 'is' and 'views'. Identify nouns - naming words, like 'user', 'home' and 'sequence'. List the adjectives - describing words, for example 'quick', 'simple' or 'precise'. The verbs are the functions that must be provided by your application. The nouns define the parameters to those functions, and the adjectives specify the constraint conditions under which your program must operate." On how to start writing software: "Handle errors. Take in data. Show output. Get going!" On testing: "It may not be physically possible to test every potential combination of situations that could occur as users interact with a program. But one thing that can be done is to test an application at the agreed extremes of its capability: the maximum number of simultaneous users it has to support, the minimum system configuration it must run on, the lowest communication speed it must cope with, and the most complex operations it must perform. If your program can cope with conditions at the edge of its performance envelope, it is less likely to encounter difficulties in dealing with less challenging situations." On showing early versions of software to users: "It can be hard explaining the software development process to people who are unfamiliar with it. Code that to you is nearly finished is simply not working to them, and seeing their dream in bits on the workbench can be disappointing to customers, especially when they were expecting to be able to take it for a test drive." On bugs: "If your users find a genuinely reproducible bug in production code, apologize, fix it fast, and then fix the system that allowed it through. And tell your customers what you are doing, and why, so they will be confident that it will not happen again. Everybody makes mistakes. Don't make the same ones twice." And one last thought on successful software development: "You have to be a detective, following up clues and examining evidence to discover what has gone wrong and why. And you have to be a politician, underst

Machine Learning Applications In Software Engineering

World Scientific Machine learning deals with the issue of how to build computer programs that improve their performance at some tasks through experience. Machine learning algorithms have proven to be of great practical value in a variety of application domains. Not surprisingly, the field of software engineering turns out to be a fertile ground where many software development and maintenance tasks could be formulated as learning problems and approached in terms of learning algorithms. This book deals with the subject of machine learning applications in software engineering. It provides an overview of machine learning, summarizes the state-of-the-practice in this niche area, gives a classification of the existing work, and offers some application guidelines. Also included in the book is a collection of previously published papers in this research area.

Advances in Machine Learning Applications in Software Engineering

IGI Global "This book provides analysis, characterization and refinement of software engineering data in terms of machine learning methods. It depicts applications of several machine learning approaches in software systems development and deployment, and the use of machine learning methods to establish predictive models for software quality while offering readers suggestions by proposing future work in this emerging research field"--Provided by publisher.

Computer Systems and Software Engineering: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global Professionals in the interdisciplinary field of computer science focus on the design, operation, and maintenance of computational systems and software. Methodologies and tools of engineering are utilized alongside computer applications to develop efficient and precise information databases. Computer Systems and Software Engineering: Concepts, Methodologies, Tools, and Applications is a comprehensive reference source for the latest scholarly material on trends, techniques, and uses of various technology applications and examines the benefits and challenges of these computational developments. Highlighting a range of pertinent topics such as utility computing, computer security, and information systems applications, this multi-volume book is ideally designed for academicians, researchers, students, web designers, software developers, and practitioners interested in computer systems and software engineering.

Software Engineering for Variability Intensive Systems

Foundations and Applications

CRC Press This book addresses the challenges in the software engineering of variability-intensive systems. Variability-intensive systems can support different usage scenarios by accommodating different and unforeseen features and qualities. The book features academic and industrial contributions that discuss the challenges in developing, maintaining and evolving systems, cloud and mobile services for variability-intensive software systems and the scalability requirements they imply. The book explores software engineering approaches that can efficiently deal with variability-intensive systems as well as applications and use cases benefiting from variability-intensive systems.

Computational Intelligence Techniques and Their Applications to Software Engineering

Problems

CRC Press Computational Intelligence Techniques and Their Applications to Software Engineering Problems focuses on computational intelligence approaches as applicable in varied areas of software engineering such as software requirement prioritization, cost estimation, reliability assessment, defect prediction, maintainability and quality prediction, size estimation, vulnerability prediction, test case selection and prioritization, and much more. The concepts of expert systems, case-based reasoning, fuzzy logic, genetic algorithms, swarm computing, and rough sets are introduced with their applications in software engineering. The field of knowledge discovery is explored using neural networks and data mining techniques by determining the underlying and hidden patterns in software data sets. Aimed at graduate students and researchers in computer science engineering, software engineering, information technology, this book: Covers various aspects of in-depth solutions of software engineering problems using computational intelligence techniques Discusses the latest evolutionary approaches to preliminary theory of different solve optimization problems under software engineering domain Covers heuristic as well as meta-heuristic algorithms designed to provide better and optimized solutions Illustrates applications including software requirement prioritization, software cost estimation, reliability assessment, software defect prediction, and more Highlights swarm intelligence-based optimization solutions for software testing and reliability problems

Software Engineering for Multi-Agent Systems III

Research Issues and Practical Applications

Springer Science & Business Media This book presents a coherent and well-balanced survey of recent advances in software engineering approaches to the design and analysis of realistic large-scale multi-agent systems (MAS). The chapters included are devoted to various techniques and methods used to cope with the complexity of real-world MAS. The power of agent-based software engineering is illustrated using examples that are representative of successful applications. The 16 thoroughly reviewed and revised full papers are organized in topical sections on agent methodologies and processes, requirements engineering and software architectures, modeling languages, and dependability and coordination. Most of the papers were initially presented at the 3rd International Workshop on Software Engineering for Large-Scale Multi-agent Systems, SELMAS 2004, held in Edinburgh, UK in May 2004 in association with ICSE 2004. Other papers were invited to complete coverage of all relevant aspects.

Software Engineering and Testing

Jones & Bartlett Learning Designed for an introductory software engineering course or as a reference for programmers, this up to date text uses both theory and applications to design reliable, error-free software. Starting with an introduction to the various types of software, the book moves through life-cycle models, software specifications, testing techniques, computer-aided software engineering and writing effective source code. A chapter on applications covers software development techniques used in various applications including VisualBasic, Oracle, SQLServer, and CrystalReports. A CD-ROM with source code and third-party software engineering applications accompanies the book.

Fundamentals of Software Engineering

Designed to provide an insight into the software engineering concepts

BPB Publications Practical Handbook to understand the hidden language of computer hardware and software DESCRIPTION This book teaches the essentials of software engineering to anyone who wants to become an active and independent software engineer expert. It covers all the software engineering fundamentals without forgetting a few vital advanced topics such as software engineering with artificial intelligence, ontology, and data mining in software engineering. The primary goal of the book is to introduce a limited number of concepts and practices which will achieve the following two objectives: Teach students the skills needed to execute a smallish commercial project. Provide students with the necessary conceptual background for undertaking advanced studies in software engineering through courses or on their own. KEY FEATURES - This book contains real-time executed examples along with case studies. - Covers advanced technologies that are intersectional with software engineering. - Easy and simple language, crystal clear approach, and straight forward comprehensible presentation. - Understand what architecture design involves, and where it fits in the full software development life cycle. - Learning and optimizing the critical relationships between analysis and design. - Utilizing proven and reusable design primitives and adapting them to specific problems and contexts. WHAT WILL YOU

LEARN This book includes only those concepts that we believe are foundational. As executing a software project requires skills in two dimensions—engineering and project management—this book focuses on crucial tasks in these two dimensions and discuss the concepts and techniques that can be applied to execute these tasks effectively. WHO THIS BOOK IS FOR The book is primarily intended to work as a beginner's guide for Software Engineering in any undergraduate or postgraduate program. It is directed towards students who know the program but have not had formal exposure to software engineering. The book can also be used by teachers and trainers who are in a similar state—they know some programming but want to be introduced to the systematic approach of software engineering. TABLE OF CONTENTS 1. Introductory Concepts of Software Engineering 2. Modelling Software Development Life Cycle 3. Software Requirement Analysis and Specification 4. Software Project Management Framework 5. Software Project Analysis and Design 6. Object-Oriented Analysis and Design 7. Designing Interfaces & Dialogues and Database Design 8. Coding and Debugging 9. Software Testing 10. System Implementation and Maintenance 11. Reliability 12. Software Quality 13. CASE and Reuse 14. Recent Trends and Development in Software Engineering 15. Model Questions with Answers

Handbook of Research on Mobile Software Engineering Design, Implementation, and Emergent Applications

"This book highlights state-of-the-art research concerning the key issues surrounding current and future challenges associated with the software engineering of mobile systems and related emergent applications"--

Handbook of Software Engineering and Knowledge Engineering

World Scientific This is the first handbook to cover comprehensively both software engineering and knowledge engineering OCo two important fields that have become interwoven in recent years. Over 60 international experts have contributed to the book. Each chapter has been written in such a way that a practitioner of software engineering and knowledge engineering can easily understand and obtain useful information. Each chapter covers one topic and can be read independently of other chapters, providing both a general survey of the topic and an in-depth exposition of the state of the art. Practitioners will find this handbook useful when looking for solutions to practical problems. Researchers can use it for quick access to the background, current trends and most important references regarding a certain topic. The handbook consists of two volumes. Volume One covers the basic principles and applications of software engineering and knowledge engineering. Volume Two will cover the basic principles and applications of visual and multimedia software engineering, knowledge engineering, data mining for software knowledge, and emerging topics in software engineering and knowledge engineering. Sample Chapter(s). Chapter 1.1: Introduction (97k). Chapter 1.2: Theoretical Language Research (97k). Chapter 1.3: Experimental Science (96k). Chapter 1.4: Evolutionary Versus Revolutionary (108k). Chapter 1.5: Concurrency and Parallelisms (232k). Chapter 1.6: Summary (123k). Contents: Computer Language Advances (D E Cooke et al.); Software Maintenance (G Canfora & A Cimitile); Requirements Engineering (A T Berztiss); Software Engineering Standards: Review and Perspectives (Y-X Wang); A Large Scale Neural Network and Its Applications (D Graupe & H Kordylewski); Software Configuration Management in Software and Hypermedia Engineering: A Survey (L Bendix et al.); The Knowledge Modeling Paradigm in Knowledge Engineering (E Motta); Software Engineering and Knowledge Engineering Issues in Bioinformatics (J T L Wang et al.); Conceptual Modeling in Software Engineering and Knowledge Engineering: Concepts, Techniques and Trends (O Dieste et al.); Rationale Management in Software Engineering (A H Dutoit & B Paech); Exploring Ontologies (Y Kalfoglou), and other papers. Readership: Graduate students, researchers, programmers, managers and academics in software engineering and knowledge engineering."

Knowledge-Based Software Engineering

Springer Science & Business Media This special issue of the Journal of Automated Software Engineering contains four extended papers from the 10th Knowledge-Based Software Engineering Conference, held in Boston, Massachusetts in November 1995. The conference provides a forum for researchers and practitioners to discuss applications of automated reasoning, knowledge representation, and artificial intelligence techniques to software engineering problems. The papers included herein are the best paper award winners, or candidates for same.

Special Issue Empirical Studies of Software Engineering

Applications and Contributions from Human Computer Interaction

Software Engineering Frameworks for the Cloud Computing Paradigm

Springer Science & Business Media This book presents the latest research on Software Engineering Frameworks for the Cloud Computing Paradigm, drawn from an international selection of researchers and practitioners. The book offers both a discussion of relevant software engineering approaches and practical guidance on enterprise-wide software deployment in the cloud environment, together with real-world case studies. Features: presents the state of the art in software engineering approaches for developing cloud-suitable applications; discusses the impact of the cloud computing paradigm on software engineering; offers guidance and best practices for students and practitioners; examines the stages of the software development lifecycle, with a focus on the requirements engineering and testing of cloud-based applications; reviews the efficiency and performance of cloud-based applications; explores feature-driven and cloud-aided software design; provides relevant theoretical frameworks, practical approaches and future research directions.

Software Security Engineering

Design and Applications

Nova Science Pub Incorporated Software engineering has established techniques, methods and technology over two decades. However, due to the lack of understanding of software security vulnerabilities, we have been not successful in applying software engineering principles when developing secured software systems. Therefore software security can not be added after a system has been built as seen on today's software applications. This book provides concise and good practice design guidelines on software security which will benefit practitioners, researchers, learners, and educators. Topics discussed include systematic approaches to engineering; building and assuring software security throughout software lifecycle; software security based requirements engineering; design for software security; software security implementation; best practice guideline on developing software security; test for software security and quality validation for software security.

Encyclopedia of Software Engineering Three-Volume Set (Print)

CRC Press 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

The Technical and Social History of Software Engineering

Pearson Education Pioneering software engineer Capers Jones has written the first and only definitive history of the entire software engineering industry. Drawing on his extraordinary vantage point as a leading practitioner for several decades, Jones reviews the entire history of IT and software engineering, assesses its impact on society, and previews its future. One decade at a time, Jones assesses emerging trends and companies, winners and losers, new technologies, methods, tools, languages, productivity/quality benchmarks, challenges, risks, professional societies, and more. He quantifies both beneficial and harmful software inventions; accurately estimates the size of both the US and global software industries; and takes on "unexplained mysteries" such as why and how programming

languages gain and lose popularity.

Software Engineering and Computer Systems, Part I

Second International Conference, ICSECS 2011, Kuantan, Malaysia, June 27-29, 2011. Proceedings

Springer Science & Business Media 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.

Software Engineering - ESEC '95

5th European Software Engineering Conference, Sitges, Spain, September 25 - 28, 1995. Proceedings

Springer Science & Business Media This book constitutes the proceedings of the 5th European Software Engineering Conference, ESEC '95, held in Sitges near Barcelona, Spain, in September 1995. The ESEC conferences are the premier European platform for the discussion of academic research and industrial use of software engineering technology. The 29 revised full papers were carefully selected from more than 150 submissions and address all current aspects of relevance. Among the topics covered are business process (re-)engineering, real-time, software metrics, concurrency, version and configuration management, formal methods, design process, program analysis, software quality, and object-oriented software development.

Advances in Software Engineering and Knowledge Engineering

World Scientific The papers collected in the book were invited by the editors as tutorial courses or keynote speeches for the Fourth International Conference on Software Engineering and Knowledge Engineering. It was the editors' intention that this book should offer a wide coverage of the main topics involved with the specifications, prototyping, development and maintenance of software systems and knowledge-based systems. The main issues in the area of software engineering and knowledge engineering are addressed and for each analyzed topic the corresponding of state research is reported. Contents: An Introduction to Software Architecture (D Garland & M Shaw) Modeling the Software Development Process (V Ambriola & C Montangero) Knowledge Representation in Current Design Methods (B I Blum) Unifying Multi-Paradigms in Software System Design (Y Deng & S K Chang) What is Logic Programming Good for in Software Engineering? (P Ciancarini & G Levi) Parallel Execution of Real-Time Petri Nets (C Ghezzi et al.) Introduction to Information Retrieval for Software Reuse (Y S Maarek) Issues in the Verification and Validation of Knowledge-Based Systems (R M O'Keefe) Readership: Computer scientists. keywords:

Methods for Developing Scientific and Engineering Applications Using Information

Engineering Integrated Computer-aided Software Engineering Tools

Computer Games and Software Engineering

CRC Press Computer games represent a significant software application domain for innovative research in software engineering techniques and technologies. Game developers, whether focusing on entertainment-market opportunities or game-based applications in non-entertainment domains, thus share a common interest with software engineers and developers on how to best engineer game software. Featuring contributions from leading experts in software engineering, the book provides a comprehensive introduction to computer game software development that includes its history as well as emerging research on the interaction between these two traditionally distinct fields. An ideal reference for software engineers, developers, and researchers, this book explores game programming and development from a software engineering perspective. It introduces the latest research in computer game software engineering (CGSE) and covers topics such as HALO (Highly Addictive, socially Optimized) software engineering, multi-player outdoor smartphone games, gamifying sports software, and artificial intelligence in games. The book explores the use of games in software engineering education extensively. It also covers game software requirements engineering, game software architecture and design approaches, game software testing and usability assessment, game development frameworks and reusability techniques, and game scalability infrastructure, including support for mobile devices and web-based services.

Evaluation of Novel Approaches to Software Engineering

7th International Conference, ENASE 2012, Wroclaw, Poland, June 29-30, 2012, Revised Selected Papers

Springer This book constitutes the thoroughly refereed proceedings of the 7th International Conference on Evaluation of Novel Approaches to Software Engineering, ENASE 2012, held in Wroclaw, Poland, in June 2012. The 11 full papers presented were carefully reviewed and selected from 54 submissions. The papers cover various topics in software engineering and focus on the comparison of novel approaches with established traditional practices and by evaluating them against software quality criteria.

Software Engineering in the Era of Cloud Computing

Springer Nature This book focuses on the development and implementation of cloud-based, complex software that allows parallelism, fast processing, and real-time connectivity. Software engineering (SE) is the design, development, testing, and implementation of software applications, and this discipline is as well developed as the practice is well established whereas the Cloud Software Engineering (CSE) is the design, development, testing, and continuous delivery of service-oriented software systems and applications (Software as a Service Paradigm). However, with the emergence of the highly attractive cloud computing (CC) paradigm, the tools and techniques for SE are changing. CC provides the latest software development environments and the necessary platforms relatively easily and inexpensively. It also allows the provision of software applications equally easily and on a pay-as-you-go basis. Business requirements for the use of software are also changing and there is a need for applications in big data analytics, parallel computing, AI, natural language processing, and biometrics, etc. These require huge amounts of computing power and sophisticated data management mechanisms, as well as device connectivity for Internet of Things (IoT) environments. In terms of hardware, software, communication, and storage, CC is highly attractive for developing complex software that is rapidly becoming essential for all sectors of life, including commerce, health, education, and transportation. The book fills a gap in the SE literature by providing scientific contributions from researchers and practitioners, focusing on frameworks, methodologies, applications, benefits and inherent challenges/barriers to engineering software using the CC paradigm.

Computerworld

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

Software Engineering Perspectives and Application in Intelligent Systems

Proceedings of the 5th Computer Science On-line Conference 2016 (CSOC2016)

Springer The volume Software Engineering Perspectives and Application in Intelligent Systems presents new approaches and methods to real-world problems, and in particular, exploratory research that describes novel approaches in the field of Software Engineering. Particular emphasis is laid on modern trends in selected fields of interest. New algorithms or methods in a variety of fields are also presented. The 5th Computer Science On-line Conference (CSOC 2016) is intended to provide an international forum for discussions on the latest research results in all areas related to Computer Science. The addressed topics are the theoretical aspects and applications of Computer Science, Artificial Intelligences, Cybernetics, Automation Control Theory and Software Engineering.

Software Engineer's Reference Book

Elsevier Software Engineer's Reference Book provides the fundamental principles and general approaches, contemporary information, and applications for developing the software of computer systems. The book is comprised of three main parts, an epilogue, and a comprehensive index. The first part covers the theory of computer science and relevant mathematics. Topics under this section include logic, set theory, Turing machines, theory of computation, and computational complexity. Part II is a discussion of software development methods, techniques and technology primarily based around a conventional view of the software life cycle. Topics discussed include methods such as CORE, SSADM, and SREM, and formal methods including VDM and Z. Attention is also given to other technical activities in the life cycle including testing and prototyping. The final part describes the techniques and standards which are relevant in producing particular classes of application. The text will be of great use to software engineers, software project managers, and students of computer science.

Recommendation Systems in Software Engineering

Springer Science & Business With the growth of public and private data stores and the emergence of off-the-shelf data-mining technology, recommendation systems have emerged that specifically address the unique challenges of navigating and interpreting software engineering data. This book collects, structures and formalizes knowledge on recommendation systems in software engineering. It adopts a pragmatic approach with an explicit focus on system design, implementation, and evaluation. The book is divided into three parts: "Part I - Techniques" introduces basics for building recommenders in software engineering, including techniques for collecting and processing software engineering data, but also for presenting recommendations to users as part of their workflow. "Part II - Evaluation" summarizes methods and experimental designs for evaluating recommendations in software engineering. "Part III - Applications" describes needs, issues and solution concepts involved in entire recommendation systems for specific software engineering tasks, focusing on the engineering insights required to make effective recommendations. The book is complemented by the webpage rsse.org/book, which includes free supplemental materials for readers of this book and anyone interested in recommendation systems in software engineering, including lecture slides, data sets, source code, and an overview of people, groups, papers and tools with regard to recommendation systems in software engineering. The book is particularly well-suited for graduate students and researchers building new recommendation systems for software engineering applications or in other high-tech fields. It may also serve as the basis for graduate courses on recommendation systems, applied data mining or software engineering. Software engineering practitioners developing recommendation systems or similar applications with predictive functionality will also benefit from the broad spectrum of topics covered.

Essentials of Software Engineering

Jones & Bartlett Learning Written for the undergraduate, one-term course, Essentials of Software Engineering, Fourth Edition provides students with a systematic engineering approach to software engineering principles and methodologies. Comprehensive, yet concise, the Fourth Edition includes new information on areas of high interest to computer scientists, including Big Data and developing in the cloud.

Security-Aware Systems Applications and Software Development Methods

IGI Global With the prevalence of cyber crime and cyber warfare, software developers must be vigilant in creating systems which are impervious to cyber attacks. Thus, security issues are an integral part of every phase of software development and an essential component of software design. Security-Aware Systems Applications and Software Development Methods facilitates the promotion and understanding of the technical as well as managerial issues related to secure software systems and their development practices. This book, targeted toward researchers, software engineers, and field experts, outlines cutting-edge industry solutions in software engineering and security research to help overcome contemporary challenges.

Guide to the Software Engineering Body of Knowledge (Swebok(r))

Version 3.0

In the Guide to the Software Engineering Body of Knowledge (SWEBOK(R) Guide), the IEEE Computer Society establishes a baseline for the body of knowledge for the field of software engineering, and the work supports the Society's responsibility to promote the advancement of both theory and practice in this field. It should be noted that the Guide does not purport to define the body of knowledge but rather to serve as a compendium and guide to the knowledge that has been developing and evolving over the past four decades. Now in Version 3.0, the Guide's 15 knowledge areas summarize generally accepted topics and list references for detailed information. The editors for Version 3.0 of the SWEBOK(R) Guide are Pierre Bourque (Ecole de technologie superieure (ETS), Universite du Quebec) and Richard E. (Dick) Fairley (Software and Systems Engineering Associates (S2EA)).