

Requirements Engineering Processes And Techniques Worldwide Series In Computer Science

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Situational Method Engineering: Fundamentals and Experiences - Jolita Ralyté

2007-12-31

Over the last decade, Method Engineering, defined as the engineering discipline to design, construct and adapt methods, including supportive tools, has emerged as the research and application area for using methods for systems development. This book contains the papers from the IFIP Working Group 8.1 conference on Situational Method Engineering.

Requirements Engineering - Gerald Kotonya
1998-09-16

Requirements Engineering Processes and Techniques Why this book was written The value of introducing requirements engineering to trainee software engineers is to equip them for the real world of software and systems development. What is involved in Requirements Engineering? As a discipline, newly emerging from software engineering, there are a range of views on where requirements engineering starts

and finishes and what it should encompass. This book offers the most comprehensive coverage of the requirements engineering process to date - from initial requirements elicitation through to requirements validation. How and Which methods and techniques should you use? As there is no one catch-all technique applicable to all types of system, requirements engineers need to know about a range of different techniques. Tried and tested techniques such as data-flow and object-oriented models are covered as well as some promising new ones. They are all based on real systems descriptions to demonstrate the applicability of the approach. Who should read it? Principally written for senior undergraduate and graduate students studying computer science, software engineering or systems engineering, this text will also be helpful for those in industry new to requirements engineering. Accompanying Website: <http://www.comp.lancs.ac.uk/computing/resources/re>
Visit our Website:

<http://www.wiley.com/college/wws>
Engineering Information Systems in the Internet Context - Colette Rolland 2002-09-30

The rapid growth in Internet, World Wide Web and Intranet systems over the past decade has led to a demand for increased sophistication in established information services, engineering techniques and methods to improve the development of information systems in a World Wide Web environment. *Engineering Information Systems in the Internet Context* addresses key state-of-the-art developments in Internet based IS engineering. This timely book contains selected papers presented and discussed at the International Conference on Engineering Information Systems in the Internet Context, which was sponsored by the International Federation for Information Processing (IFIP) and held in Kanazawa, Japan in September 2002. *Engineering Information Systems in the Internet Context* will prove invaluable to anyone working in Information

Systems development, management, implementation and evaluation, as well as to researchers and practitioners in software engineering, information engineering, management science, communications and economics.

System Requirements Engineering - Pericles Loucopoulos 1995

System Requirements Engineering presents a balanced view of the issues, concepts, models, techniques and tools found in requirements engineering research and practice.

Requirements engineering is presented from business, behavioural and software engineering perspectives and a general framework is established at the outset. This book considers requirements engineering as a combination of three concurrent and interacting processes: eliciting knowledge related to a problem domain, ensuring the validity of such knowledge and specifying the problem in a formal way.

Particular emphasis is given to requirements

elicitation techniques and there is a fully integrated treatment of the development of requirements specifications through enterprise modelling, functional requirements and non-functional requirements.

Requirements Engineering: Laying a Firm Foundation - James A. Crowder 2022-01-03

This textbook lays the foundations for System-of-Systems Requirements Engineering and Requirements Management practices, principles, technique, and processes. It provides a comprehensive treatment of requirements engineering, an integral part of Multidisciplinary Systems Engineering. The book takes the student/reader through the entire process of documenting, analyzing, tracing, prioritizing, and managing requirements, and then goes on to describe controlling and communicating requirement change throughout the system development lifecycle. The authors discuss the role of requirements management in support of other requirements engineering processes;

describe the principal requirements engineering activities and their relationships; introduces techniques for requirements elicitation and analysis and describes requirements validation and the role of requirements reviews; and discusses the role of requirements management in support of other requirements engineering processes. A full suite of classroom material is provided including exercises, assignments, and PowerPoint slides.

Concurrent and Real-time Systems - Steve Schneider 1999-11-15

The CSP approach has been widely used in the specification, analysis and verification of concurrent and real-time systems, and for understanding the particular issues that can arise when concurrency is present. It provides a language which enables specifications and designs to be clearly expressed and understood, together with a supporting theory which allows them to be analyzed and shown to be correct. This book supports advanced level courses on

concurrency covering timed and untimed CSP. The first half introduces the language of CSP, the primary semantic models (traces, failures, divergences and infinite traces), and their use in the modelling, analysis and verification of concurrent systems. The second half of the book introduces time into the language, brings in the timed semantic model (timed failures) and finally presents the theory of timewise refinement which links the two halves together.

Accompanying website:

<http://www.cs.rhnc.ac.uk/books/concurrency>

Containing the following: -Exercises and solutions -Instructors resources - Example CSP programs to run on FDR and ProBe -Links to useful sites
Partial Contents: Part I: The Language of CSP; Sequential Processes; Concurrency; Abstraction and Control Flow; Part II: Analyzing Processes; Traces; Specification and Verification with Traces; Stable Failures; Specification and Verification with Failures; Failures, Divergences, and Infinite Traces; Part

III: Introducing Time; The Timed Language; Timed transition systems; Part IV: Timed Analysis; Semantics of Timed CSP; Timed Specification and Verification; Timewise Refinement; Appendix A: Event-based Time; A.1 Standard CSP and stock ; A.2 Translating from Timed CSP; A.3 Notes; Appendix B: Model-checking with FDR; B.1 Interacting with FDR; B.2 How FDR Checks Refinement; B.3 Machine readable CSP; Index of Processes.

Software Quality. Model-Based Approaches for Advanced Software and Systems Engineering - Dietmar Winkler 2014-01-09

This book constitutes the refereed proceedings of the 6th Software Quality Days Conference (SWQD) held in Vienna, Austria, in January 2014. This professional symposium and conference offers a range of comprehensive and valuable opportunities for advanced professional training, new ideas and networking with a series of keynote speeches, professional lectures, exhibits and tutorials. The four scientific full

papers accepted for SWQD were each peer reviewed by three or more reviewers and selected out of 24 high-quality submissions. Further, one keynote and ten short papers on promising research directions were also presented and included in order to spark discussions between researchers and practitioners. The papers are organized into topical sections on software process improvement and measurement, requirements management, value-based software engineering, software and systems testing, automation-supported testing and quality assurance and collaboration.

Requirements Engineering - Klaus Pohl

2010-07-24

Requirements engineering is the process of eliciting individual stakeholder requirements and needs and developing them into detailed, agreed requirements documented and specified in such a way that they can serve as the basis for all other system development activities. In this

textbook, Klaus Pohl provides a comprehensive and well-structured introduction to the fundamentals, principles, and techniques of requirements engineering. He presents approved techniques for eliciting, negotiating and documenting as well as validating, and managing requirements for software-intensive systems. The various aspects of the process and the techniques are illustrated using numerous examples based on his extensive teaching experience and his work in industrial collaborations. His presentation aims at professionals, students, and lecturers in systems and software engineering or business applications development. Professionals such as project managers, software architects, systems analysts, and software engineers will benefit in their daily work from the didactically well-presented combination of validated procedures and industrial experience. Students and lecturers will appreciate the comprehensive description of sound fundamentals, principles,

and techniques, which is completed by a huge commented list of references for further reading. Lecturers will find additional teaching material on the book's website, www.requirements-book.com.

The Future of Intelligent Transport Systems - George J. Dimitrakopoulos 2020-03-27

The Future of Intelligent Transport Systems considers ITS from three perspectives: users, business models and regulation/policy. Topics cover in-vehicle applications, such as autonomous driving, vehicle-to-vehicle/vehicle-to-infrastructure communication, and related applications, such as personalized mobility. The book also examines ITS technology enablers, such as sensing technologies, wireless communication, computational technology, user behavior as part of the transportation chain, financial models that influence ITS, regulations, policies and standards affecting ITS, and the future of ITS applications. Users will find a holistic approach to the most recent

technological advances and the future spectrum of mobility. Systematically presents the whole spectrum of next generation Intelligent Transport Systems (ITS) technologies Integrates coverage of personalized mobility and digital assistants, big data analytics and autonomous driving Includes end-of-chapter, open-ended questions that trigger thinking on the technological, managerial and regulatory aspects of ITS

Requirements Engineering - Elizabeth Hull 2010-10-05

Written for those who want to develop their knowledge of requirements engineering process, whether practitioners or students. Using the latest research and driven by practical experience from industry, Requirements Engineering gives useful hints to practitioners on how to write and structure requirements. It explains the importance of Systems Engineering and the creation of effective solutions to problems. It describes the underlying

representations used in system modeling and introduces the UML2, and considers the relationship between requirements and modeling. Covering a generic multi-layer requirements process, the book discusses the key elements of effective requirements management. The latest version of DOORS (Version 7) - a software tool which serves as an enabler of a requirements management process - is also introduced to the reader here. Additional material and links are available at:

<http://www.requirementsengineering.info>
Models, Methods and Tools for Product Service Design - Laura Cattaneo 2018-08-30

This open access book summarizes research being pursued within the Manutelligence project, the goal of which is to help enterprises develop smart, social and flexible products with high value added services. Manutelligence has improved Product and Service Design by developing suitable models and methods, and connecting them through a modular,

collaborative and secure ICT Platform. The use of real data collected in real time by Internet of Things (IoT) technologies underpins the design of product-service systems and makes it possible to monitor them throughout their life cycle. Available data allows costs and sustainability issues to be more accurately measured and simulated in the form of Life Cycle Cost (LCC) and Life Cycle Assessment (LCA). Analysing data from IoT systems and sharing LCC and LCA information via the ICT Platform can help to accelerate the design of product-service systems, reduce costs and better understand customer needs. Industrial partners involved in Manutelligence provide a clear overview of the project's outcomes, and demonstrate how its technological solutions can be used to improve the design of product-service systems and the management of product-service life cycles. [Component-Based Software Quality](#) - Alejandra Cechich 2003-11-06
Component-based software development, CBSD,

is no longer just one more new paradigm in software engineering, but is effectively used in development and practice. So far, however, most of the efforts from the software engineering community have concentrated on the functional aspects of CBSD, leaving aside the treatment of the quality issues and extra-functional properties of software components and component-based systems. The 16 revised chapters presented were carefully reviewed and selected for inclusion in the book; together with an introductory survey, they give a coherent and competent survey of the state of the art in the area. The book - the first to focus on quality issues of components and component-based systems - is organized in topical parts on COTS selection, testing and certification, software component quality models, formal models to quality assessment, and CBSD management. *Business Process Management Workshops* - Danilo Ardagna 2009-06-07
Constitutes the refereed post-workshop

proceedings of 9 international workshops held in Milano, Italy, in conjunction with the 6th International Conference on Business Process Management, BPM 2008, in September 2008. *Advances in Communication, Network, and Computing* - Vinu V Das 2012-11-28
This book constitutes the thoroughly refereed proceedings of the Third International Conference on Advances in Communication, Network, and Computing, CNC 2012, held in Chennai, India, February 24-25, 2012. The 41 revised full papers presented together with 29 short papers and 14 poster papers were carefully selected and reviewed from 425 submissions. The papers cover a wide spectrum of issues in the field of Information Technology, Networks, Computational Engineering, Computer and Telecommunication Technology, ranging from theoretical and methodological issues to advanced applications. **New Trends in Software Methodologies, Tools and Techniques** - Hamido Fujita 2003

Computer Science and Its Applications -

Abdelmalek Amine 2015-05-12

This book constitutes the refereed proceedings of the 5th IFIP TC 5 International Conference on Computer Science and Its Applications, CIIA 2015, held in Saida, Algeria, in May 2015. The 56 revised papers presented were carefully reviewed and selected from 225 submissions. The papers are organized in the following four research tracks: computational intelligence; security and network technology; information technology; and software engineering.

Evaluation of Novel Approaches to Software Engineering - Raian Ali 2022

The present book includes extended and revised versions of a set of selected papers from the 16th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2021), held as an online event from April 26 to 27, 2021. The 15 revised full papers presented were carefully reviewed and selected from 96 submissions. The papers included in this

book contribute to the understanding of relevant trends of current research on novel approaches to software engineering for the development and maintenance of systems and applications, specifically with relation to: model-driven software engineering, requirements engineering, empirical software engineering, service-oriented software engineering, business process management and engineering, knowledge management and engineering, reverse software engineering, software process improvement, software change and configuration management, software metrics, software patterns and refactoring, application integration, software architecture, cloud computing, and formal methods.

Advanced Computing - Natarajan

Meghanathan 2010-12-14

This volume constitutes the third of three parts of the refereed proceedings of the First International Conference on Computer Science and Information Technology, CCSIT 2010, held

in Bangalore, India, in January 2011. The 46 revised full papers presented in this volume were carefully reviewed and selected. The papers are organized in topical sections on soft computing, such as AI, Neural Networks, Fuzzy Systems, etc.; distributed and parallel systems and algorithms; security and information assurance; ad hoc and ubiquitous computing; wireless ad hoc networks and sensor networks. *Computing Handbook, Third Edition* - Tefilo Gonzalez 2014-05-07

Computing Handbook, Third Edition: Computer Science and Software Engineering mirrors the modern taxonomy of computer science and software engineering as described by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS). Written by established leading experts and influential young researchers, the first volume of this popular handbook examines the elements involved in designing and implementing software, new areas in which computers are

being used, and ways to solve computing problems. The book also explores our current understanding of software engineering and its effect on the practice of software development and the education of software professionals. Like the second volume, this first volume describes what occurs in research laboratories, educational institutions, and public and private organizations to advance the effective development and use of computers and computing in today's world. Research-level survey articles provide deep insights into the computing discipline, enabling readers to understand the principles and practices that drive computing education, research, and development in the twenty-first century.

Governance and Sustainability in Information Systems. Managing the Transfer and Diffusion of IT - Markus Nüttgens 2011-09-08

This book constitutes the refereed proceedings of the IFIP WG 8.6 International Working

Conference on Governance and Sustainability in Information Systems, held in Hamburg, Germany, in September 2011. The 14 revised full papers and 16 research in progress and practice papers presented were carefully reviewed and selected from 47 submissions. The full research papers are organized in the following topical sections: governance, sustainability, design themes, customer and user integration, and future subjects.

E-business - Brian Stanford-Smith 2000

How can the Internet and world wide web improve my long-term competitive advantage? This book helps answer this question by providing a better understanding of the technologies, their potential applications and the ways they can be used to add value for customers, support new strategies, and improve existing operations. It is not just about e-commerce but the broader theme of e-business which affects products, business processes, strategies, and relationships with customers,

suppliers, distributors and competitors. To cover future trends, the editors have collected papers from authors operating at the frontiers of the developments so the reader can more appreciate the directions in which these technologies are heading. The resulting 165 essays have been collated into ten sections, which have been grouped in three parts: key issues, applications areas and applications, tools and technologies. A business rarely makes radical changes but is constantly making adjustments to circumstances. Businesses must now adapt to the global implications of the Internet and world wide web. This book hopes to aid awareness of the implications so that the changes are managed wisely.

Advances in Information Systems Development: - Anders G. Nilsson 2006-05-31

The two-volume Advances in Information Systems Development: Bridging the Gap between Academia and Industry constitutes the collected proceedings of the Fourteenth

International Conference on Information Systems Development: Methods and Tools, Theory and Practice - ISD'2005 Conference. The focus of these volumes is to examine the exchange of ideas between academia and industry and aims to explore new solutions. The proceedings follow the seven conference tracks highlighted at the Conference: Co-design of Business and IT; Communication and Methods; Human Values of Information Technology; Service Development and IT; Requirements Engineering in the IS Life-Cycle; Semantic Web Approaches and Applications; and Management and IT.

Requirements Engineering: Foundation for Software Quality - Pete Sawyer 2007-06-28

This book constitutes the refereed proceedings of the 13th International Working Conference on Requirements Engineering: Foundation for Software Quality, REFSQ 2007, held in Trondheim, Norway. It covers goal-driven requirements engineering (RE), products and

product-lines, value-based RE and the value of RE, requirements elicitation, requirements specification, industrial experience of RE, and requirements quality and quality requirements.

Engineering and Managing Software

Requirements - Aybüke Aurum 2006-04-07

Requirements engineering is the process by which the requirements for software systems are gathered, analyzed, documented, and managed throughout their complete lifecycle. Traditionally it has been concerned with technical goals for, functions of, and constraints on software systems. Aurum and Wohlin, however, argue that it is no longer appropriate for software systems professionals to focus only on functional and non-functional aspects of the intended system and to somehow assume that organizational context and needs are outside their remit. Instead, they call for a broader perspective in order to gain a better understanding of the interdependencies between enterprise stakeholders, processes, and software

systems, which would in turn give rise to more appropriate techniques and higher-quality systems. Following an introductory chapter that provides an exploration of key issues in requirements engineering, the book is organized in three parts. Part 1 presents surveys of state-of-the-art requirements engineering process research along with critical assessments of existing models, frameworks and techniques. Part 2 addresses key areas in requirements engineering, such as market-driven requirements engineering, goal modeling, requirements ambiguity, and others. Part 3 concludes the book with articles that present empirical evidence and experiences from practices in industrial projects. Its broader perspective gives this book its distinct appeal and makes it of interest to both researchers and practitioners, not only in software engineering but also in other disciplines such as business process engineering and management science.

Process for System Architecture and

Requirements Engineering - Derek Hatley
2013-08-02

This is the digital version of the printed book (Copyright © 2000). Derek Hatley and Imtiaz Pirbhai—authors of *Strategies for Real-Time System Specification*—join with influential consultant Peter Hruschka to present a much anticipated update to their widely implemented Hatley/Pirbhai methods. *Process for System Architecture and Requirements Engineering* introduces a new approach that is particularly useful for multidisciplinary system development: It applies equally well to all technologies and thereby provides a common language for developers in widely differing disciplines. The Hatley-Pirbhai-Hruschka approach (H/H/P) has another important feature: the coexistence of the requirements and architecture methods and of the corresponding models they produce. These two models are kept separate, but the approach fully records their ongoing and changing interrelationships. This feature is

missing from virtually all other system and software development methods and from CASE tools that only automate the requirements model. System managers, system architects, system engineers, and managers and engineers in all of the diverse engineering technologies will benefit from this comprehensive, pragmatic text. In addition to its models of requirements and architecture and of the development process itself, the book uses in-depth case studies of a hospital monitoring system and of a multidisciplinary groundwater analysis system to illustrate the principles. Compatibility Between the H/H/P Methods and the UML: The Hatley/Pirbhai architecture and requirements methods—described in Strategies for Real-Time System Specification—have been widely used for almost two decades in system and software development. Now known as the Hatley/Hruschka/Pirbhai (H/H/P) methods, they have always been compatible with object-oriented software techniques, such as the UML,

by defining architectural elements as classes, objects, messages, inheritance relationships, and so on. In Process for System Architecture and Requirements Engineering, that compatibility is made more specific through the addition of message diagrams, inheritance diagrams, and new notations that go with them. In addition, state charts, while never excluded, are now specifically included as a representation of sequential machines. These additions make definition of the system/software boundary even more straightforward, while retaining the clear separation of requirements and design at the system levels that is a hallmark of the H/H/P methods—not shared by most OO techniques. Once the transition to software is made, the developer is free to continue using the H/H/P methods, or to use the UML or any other software-specific technique.

Trusting Agents for Trusting Electronic Societies - Rino Falcone 2005-07-20

Based on two international workshops on trust

in agent societies, held at AAMAS 2003 and AAMAS 2004, this book draws together carefully revised papers on trust, reputation, and security in agent society. Besides workshop papers, several contributions from leading researchers in this interdisciplinary field were solicited to complete coverage of all relevant topics. The 13 papers presented take into account issues from multiagent systems, artificial intelligence, cognitive science, game theory, and social and organizational science. Theoretical topics are addressed as well as applications in human-computer interaction and e-commerce.

Advances in Software Engineering - Haeng-kon Kim 2010-11-26

Welcome to the Proceedings of the 2010 International Conference on Advanced Software Engineering and Its Applications (ASEA 2010) - one of the partnering events of the Second International Mega-Conference on Future Generation Information Technology (FGIT 2010). ASEA brings together researchers from

academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of software engineering, including its links to computational sciences, mathematics and information technology. In total, 1,630 papers were submitted to FGIT 2010 from 30 countries, which includes 175 papers submitted to ASEA 2010. The submitted papers went through a rigorous reviewing process: 395 of the 1,630 papers were accepted for FGIT 2010, while 40 papers were accepted for ASEA 2010. Of the 640 papers were selected for the special FGIT 2010 volume published by Springer in the LNCS series. 32 papers are published in this volume, and 2 papers were withdrawn due to technical reasons. We would like to acknowledge the great effort of the ASEA 2010 International Advisory Board and members of the International Program Committee, as well as all the organizations and individuals who supported the idea of publishing this volume of proceedings,

including SERSC and Springer. Also, the success of the conference would not have been possible without the huge support from our sponsors and the work of the Chairs and Organizing Committee.

Enterprise Information Systems V - Olivier Camp
2006-02-28

This book comprises a set of papers selected from those presented at the fifth « International Conference on Enterprise Information Systems », (ICEIS'2003) held in Angers, France, from 23 to 26 April 2003. The conference was organised by École Supérieure d'Électronique de l'Ouest (ESEO) of Angers, France and the Escola Superior de Tecnologia de Setúbal, Portugal. Since its first edition in 1999, ICEIS focuses on real world applications and aims at bringing together researchers, engineers and practitioners interested in the advances and business applications of information systems. As in previous years, ICEIS'2003 held four simultaneous tracks covering different aspects

of enterprise computing: Databases and Information Systems Integration, Artificial Intelligence and Decision Support Systems, Information Systems Analysis and Specification and Software Agents and Internet Computing. Although ICEIS'2003 received 546 paper submissions from over 50 countries, only 80 were accepted as full papers and presented in 30-minutes oral presentations. With an acceptance rate of 15%, these numbers demonstrate the intention of preserving a high quality forum for future editions of this conference. From the articles accepted as long papers for the conference, only 32 were selected for inclusion in this book. Additional keynote lectures, tutorials and industrial sessions were also held during ICEIS'2003, and, for the first time this year, the 1st Doctoral Consortium on Enterprise Information Systems gave PhD students an opportunity to present their work to an international audience of experts in the field of information systems.

Recent Trends in Information and Communication Technology - Faisal Saeed

2017-05-24

This book presents 94 papers from the 2nd International Conference of Reliable Information and Communication Technology 2017 (IRICT 2017), held in Johor, Malaysia, on April 23-24, 2017. Focusing on the latest ICT innovations for data engineering, the book presents several hot research topics, including advances in big data analysis techniques and applications; mobile networks; applications and usability; reliable communication systems; advances in computer vision, artificial intelligence and soft computing; reliable health informatics and cloud computing environments, e-learning acceptance models, recent trends in knowledge management and software engineering; security issues in the cyber world; as well as society and information technology.

Encyclopedia of Information Science and Technology, Fifth Edition - Khosrow-Pour D.B.A.,

Mehdi 2020-07-24

The rise of intelligence and computation within technology has created an eruption of potential applications in numerous professional industries. Techniques such as data analysis, cloud computing, machine learning, and others have altered the traditional processes of various disciplines including healthcare, economics, transportation, and politics. Information technology in today's world is beginning to uncover opportunities for experts in these fields that they are not yet aware of. The exposure of specific instances in which these devices are being implemented will assist other specialists in how to successfully utilize these transformative tools with the appropriate amount of discretion, safety, and awareness. Considering the level of diverse uses and practices throughout the globe, the fifth edition of the Encyclopedia of Information Science and Technology series continues the enduring legacy set forth by its predecessors as a premier reference that

contributes the most cutting-edge concepts and methodologies to the research community. The Encyclopedia of Information Science and Technology, Fifth Edition is a three-volume set that includes 136 original and previously unpublished research chapters that present multidisciplinary research and expert insights into new methods and processes for understanding modern technological tools and their applications as well as emerging theories and ethical controversies surrounding the field of information science. Highlighting a wide range of topics such as natural language processing, decision support systems, and electronic government, this book offers strategies for implementing smart devices and analytics into various professional disciplines. The techniques discussed in this publication are ideal for IT professionals, developers, computer scientists, practitioners, managers, policymakers, engineers, data analysts, and programmers seeking to understand the latest

developments within this field and who are looking to apply new tools and policies in their practice. Additionally, academicians, researchers, and students in fields that include but are not limited to software engineering, cybersecurity, information technology, media and communications, urban planning, computer science, healthcare, economics, environmental science, data management, and political science will benefit from the extensive knowledge compiled within this publication.

New Trends in Software Methodologies, Tools and Techniques - H. Fujita 2009-08-31

Software is an essential enabler for science and the new economy, but software often falls short of our expectations, remaining expensive and not yet sufficiently reliable for a constantly changing and evolving market. This publication, which forms part of the SoMeT series, consists of 41 papers, carefully reviewed and revised on the basis of technical soundness, relevance, originality, significance, and clarity. These

explore new trends and theories which illuminate the direction of developments which may lead to a transformation of the role of software in tomorrow's global information society. The book offers an opportunity for the software science community to think about where they are today and where they are going. The emphasis has been placed on human-centric software methodologies, end-user development techniques, and emotional reasoning, for an optimally harmonised performance between the design tool and the user. The handling of cognitive issues in software development and the tools and techniques related to this form part of the contribution to this book. Other comparable theories and practices in software science, including emerging technologies essential for a comprehensive overview of information systems and research projects, are also addressed. This work represents another milestone in mastering the new challenges of software and its promising technology, and

provides the reader with new insights, inspiration and concrete material to further the study of this new technology.

Requirements Engineering for Software and Systems, Second Edition - Phillip A. Laplante
2013-10-17

As requirements engineering continues to be recognized as the key to on-time and on-budget delivery of software and systems projects, many engineering programs have made requirements engineering mandatory in their curriculum. In addition, the wealth of new software tools that have recently emerged is empowering practicing engineers to improve their requirements engineering habits. However, these tools are not easy to use without appropriate training. Filling this need, *Requirements Engineering for Software and Systems, Second Edition* has been vastly updated and expanded to include about 30 percent new material. In addition to new exercises and updated references in every chapter, this edition updates all chapters with

the latest applied research and industry practices. It also presents new material derived from the experiences of professors who have used the text in their classrooms. Improvements to this edition include: An expanded introductory chapter with extensive discussions on requirements analysis, agreement, and consolidation An expanded chapter on requirements engineering for Agile methodologies An expanded chapter on formal methods with new examples An expanded section on requirements traceability An updated and expanded section on requirements engineering tools New exercises including ones suitable for research projects Following in the footsteps of its bestselling predecessor, the text illustrates key ideas associated with requirements engineering using extensive case studies and three common example systems: an airline baggage handling system, a point-of-sale system for a large pet store chain, and a system for a smart home. This edition also includes an

example of a wet well pumping system for a wastewater treatment station. With a focus on software-intensive systems, but highly applicable to non-software systems, this text provides a probing and comprehensive review of recent developments in requirements engineering in high integrity systems.

[Encyclopedia of Software Engineering Three-Volume Set \(Print\)](#) - Phillip A. Laplante
2010-11-22

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

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Trustworthy Software Development

Processes - Qing Wang 2009-05-08

This volume contains papers presented at the International Conference on Software Process (ICSP 2009) held in Vancouver, Canada, during May 16-17, 2009. ICSP 2009 was the third conference of the ICSP series, continuing the software process workshops from 25 years ago. The theme of ICSP 2009 was “Processes to Develop Trustworthy Software.” Software development takes place in a dynamic context of frequently changing technologies and limited resources. Teams worldwide are under increasing pressure to deliver trustworthy software products more quickly and with higher

levels of quality. At the same time, global competition is forcing software development organizations to cut costs by rationalizing processes, outsourcing part or all of their activities, re- ing existing software in new or modified applications and evolving existing systems to meet new needs, while still minimizing the risk of projects failing to deliver. To address these difficulties, new or modified processes are emerging including lean and agile methods, plan-based product line development, and increased integration with systems engineering processes. Papers present research and real-world experience in many areas of software and systems processes impacting trustworthy software including: new software devel- ment approaches; software quality; integrating software and business processes; CMMI and other process improvement initiatives; simulation and modeling of so- ware processes; techniques for software process representation and analysis; and process tools

and metrics.

Transdisciplinary Engineering: Crossing Boundaries - M. Borsato 2016-10-13

The Concurrent Engineering (CE) approach was developed in the 1980s, based on the concept that different phases of a product life cycle should be conducted concurrently and initiated as early as possible within the Product Creation Process (PCP). CE concepts have matured and become the foundation of many new ideas, methodologies, initiatives, approaches and tools. This book contains the proceedings from the 23rd ISPE Inc. International Conference on Transdisciplinary (formerly: Concurrent) Engineering, held in Curitiba, Parana, Brazil, in October 2016. The conference, entitled 'Transdisciplinary Engineering: Crossing Boundaries', provides an important forum for international scientific exchange on Concurrent Engineering and collaborative enterprises, and attracts the participation of researchers, industry experts and students, as well as

government representatives. The 108 peer reviewed papers and keynote speech included here, range from theoretical and conceptual to strongly pragmatic works, which are organized into 17 sections including: Concurrent Engineering and knowledge exchange; engineering for sustainability; multidisciplinary project management; collaborative design and engineering; optimization of engineering operations and data analytics; and multidisciplinary design optimization, among others. The book gives an overview of the latest research, advancements and applications in the field and will be of interest to researchers, design practitioners and educators.

Models for Capitalizing on Web Engineering Advancements: Trends and Discoveries - Alkhatib, Ghazi 2012-01-31

"This book contains research on new developments and existing applications made possible by the principles of Web engineering, focusing on a broad range of applications - from

telemedicine to geographic information retrieval"--Provided by publisher.

Requirements in Engineering Projects - João M. Fernandes 2015-07-18

This book focuses on various topics related to engineering and management of requirements, in particular elicitation, negotiation, prioritisation, and documentation (whether with natural languages or with graphical models). The book provides methods and techniques that help to characterise, in a systematic manner, the requirements of the intended engineering system. It was written with the goal of being adopted as the main text for courses on requirements engineering, or as a strong reference to the topics of requirements in courses with a broader scope. It can also be used in vocational courses, for professionals interested in the software and information systems domain. Readers who have finished this book will be able to: - establish and plan a requirements engineering process within the

development of complex engineering systems; - define and identify the types of relevant requirements in engineering projects; - choose and apply the most appropriate techniques to elicit the requirements of a given system; - conduct and manage negotiation and prioritisation processes for the requirements of a given engineering system; - document the requirements of the system under development, either in natural language or with graphical and formal models. Each chapter includes a set of exercises.

Product-Focused Software Process

Improvement - Pekka Abrahamsson 2016-11-15

This book constitutes the proceedings of the 17th International Conference on Product-Focused Software Process Improvement, PROFES 2016, held in Trondheim, Norway, in November 2016. The 24 revised full papers presented together with 21 short papers, 1 keynote, 3 invited papers, 5 workshop papers, 2 doctoral symposium papers, and 6 tutorials were

carefully reviewed and selected from 82 submissions. The papers are organized in topical sections on Early Phases in Software Engineering; Organizational Models; Architecture; Methods and Tools; Verification and Validation; Process Improvement; Speed and Agility in System Engineering; Requirements and Quality; Process and Repository Mining; Business Value and Benefits; Emerging Research Topics; and Future of Computing.

Software Reuse: Methods, Techniques, and Tools - Jan Bosch 2004-06-14

This book constitutes the refereed proceedings of the 8th International Conference on Software Reuse, ICSR-8, held in Madrid, Spain in July 2004. The 28 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on software variability: requirements; testing reusable software; feature modeling; aspect-oriented software development;

component and service development; code level reuse; libraries, classification, and retrieval; model-based approaches; transformation and generation; and requirements.

Systems Engineering - Joseph Eli Kasser
2019-09-18

This book will change the way you think about problems. It focuses on creating solutions to all sorts of complex problems by taking a practical, problem-solving approach. It discusses not only what needs to be done, but it also provides guidance and examples of how to do it. The book applies systems thinking to systems engineering and introduces several innovative concepts such as direct and indirect stakeholders and the Nine-System Model, which provides the context for the activities performed in the project, along with a framework for successful stakeholder

management. A list of the figures and tables in this book is available at

<https://www.crcpress.com/9781138387935>.

FEATURES • Treats systems engineering as a problem-solving methodology • Describes what tools systems engineers use and how they use them in each state of the system lifecycle • Discusses the perennial problem of poor requirements, defines the grammar and structure of a requirement, and provides a template for a good imperative construction statement and the requirements for writing requirements • Provides examples of bad and questionable requirements and explains the reasons why they are bad and questionable • Introduces new concepts such as direct and indirect stakeholders and the Shmemp! • Includes the Nine-System Model and other unique tools for systems engineering