Method Engineering Principles Of Method Construction And Tool Support
Ifip Advances In Information And Communication Technology |
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Manufacturing Engineering: Principles For Optimization
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Research Issues in Systems Analysis and Design, Databases and Software Development
Hayes' Principles and Methods of Toxicology
Mathematical Methods in Chemical and Biological Engineering
Handbook of Software Engineering and Knowledge Engineering
Requirements Engineering: Foundation for Software Quality
Model-Driven Software Migration: A Methodology
Engineering Methods in the Service-Oriented Context
Genetic Engineering
Advances in Information Systems Development

Today, reliable software systems are the basis of any business or company. The continuous further development of those systems is the central component in software evolution. It requires a huge amount of time- man power- as well as financial resources. The challenges are size, seniority and heterogeneity of those software systems. Christian Wagner addresses software evolution: the inherent problems and uncertainties in the process. He presents a model-driven method which leads to a synchronization between source code and design. As a result the model layer will be the central part in further evolution and source code becomes a by-product. For the first time a model-driven procedure for maintenance and migration of software systems is described. The procedure is composed of a model-driven reengineering and a model-driven migration phase. The application and effectiveness of the procedure are confirmed with a reference implementation applied to four exemplary systems.

For the last two decades, IS researchers have conducted empirical studies leading to better understanding of the impact of Systems Analysis and Design methods in business, managerial, and cultural contexts. SA & D research has established a balanced focus not only on technical issues, but also on organizational and social issues in the information society. This volume presents the very latest, state-of-the-art research by well-known figures in the field. The chapters are grouped into three categories: techniques, methodologies, and approaches. This book reviews the state-of-the-art and state-of-the-practice of modeling methods and methodologies in information systems development. The book has sections on foundations of information modeling, extended object-oriented modeling and Web information systems modeling. Information Modeling in the New Millennium addresses the gap between technical and business-oriented modeling approaches by providing an integrative view of modeling different of facets of ICT and organizations. This book describes in detail how ARIS methods model and identify business processes by means of the UML (Unified Modeling Language), leading to an information model that
serves as the basis for a systematic and intelligent development of application systems. Multiple real-world examples using SAP R/3 illustrate aspects of business process modeling including methods of knowledge management, implementation of workflow systems and standard software solutions, and the deployment of ARIS methods. Software is important because it is used by a great many people in companies and institutions. This book presents engineering methods for designing and building software. Based on the author’s experience in software engineering as a programmer in the defense and aerospace industries, this book explains how to ensure a software that is programmed operates according to its requirements. It also shows how to develop, operate, and maintain software engineering capabilities by instilling an engineering discipline to support programming, design, builds, and delivery to customers. This book helps software engineers to: Understand the basic concepts, standards, and requirements of software engineering. Select the appropriate programming and design techniques. Effectively use software engineering tools and applications. Create specifications to comply with the software standards and requirements. Utilize various methods and techniques to identify defects. Manage changes to standards and requirements. Besides providing a technical view, this book discusses the moral and ethical responsibility of software engineers to ensure that the software they design and program does not cause serious problems. Software engineers tend to be concerned with the technical elegance of their software products and tools, whereas customers tend to be concerned only with whether a software product meets their needs and is easy and ready to use. This book looks at these two sides of software development and the challenges they present for software engineering. A critical understanding of software engineering empowers developers to choose the right methods for achieving effective results. Effective Methods for Software Engineering guides software programmers and developers to develop this critical understanding that is so crucial in today’s software-dependent society.

The XP conference series established in 2000 was the first conference dedicated to agile processes in software engineering. The idea of the conference is to offer a unique setting for advancing the state of the art in the research and practice of agile processes. This year’s conference was the ninth consecutive edition of this international event. The conference has grown to be the largest conference on agile software development outside North America. The XP conference enjoys being one of those conferences that truly brings practitioners and academics together. About 70% of XP participants come from industry and the number of academics has grown steadily over the years. XP is more of an experience rather than a regular conference. It offers several different ways to interact and strives to create a truly collaborative environment where new ideas and exciting findings can be presented and shared. For example, this year’s open space session, which was “a conference within a conference”, was larger than ever before. Agile software development is a unique phenomenon from several perspectives. Presents the capabilities and features of new ideas and concepts in the information systems development, database, and forthcoming technologies. Provides a representation of top-notch research in all areas of systems analysis and design and databases. Business Process Management (BPM) has become one of the most widely used approaches for the design of modern organizational and information systems. The conscious treatment of business processes as significant corporate assets has facilitated substantial improvements in organizational performance but is also used to ensure the conformance of corporate activities. This Handbook presents in two volumes the contemporary body of knowledge as articulated by the world’s leading BPM thought leaders. This second volume focuses on the managerial and organizational challenges of BPM such as strategic and cultural alignment, governance and the education of BPM stakeholders. As such, this book provides concepts and methodologies for the integration of BPM. Each chapter has been contributed by leading international experts. Selected case studies complement their views and lead to a summary of BPM expertise that is unique in its coverage of the most critical success factors of BPM. The second edition of this handbook has been significantly revised and extended. Each chapter has been updated to reflect the most current developments. This includes in particular new technologies such as in-memory data and process management, social media and networks. A further focus of this revised and extended edition is on the actual deployment of the proposed theoretical concepts. This volume includes a number of entire new chapters from some of the world’s leading experts in the domain of BPM. A selection of 50 papers presented at CAA2016. Papers are grouped under the following headings: Ontologies and Standards; Field...
and Laboratory Data Recording and Analysis; Archaeological Information Systems; GIS and Spatial Analysis; 3D and Visualisation; Complex Systems Simulation; Teaching Archaeology in the Digital Age.Readership: Graduate students, researchers, programmers, managers and academics in software engineering and knowledge engineering.Key Features: There are no other handbooks in the market in this area.Keywords:"Software is the essential enabler for the new economy and for science. It creates new markets and new directions for a more reliable, flexible and robust society. It empowers the exploration of our world in ever more depth. However, software often falls short of our expectations. Current software methodologies, tools, and techniques remain expensive and not yet reliable enough for a highly changeable and evolutionary market. Many approaches have been proven only as case-by-case oriented methods. This book, as part of the SOMET series, presents new trends and theories in the direction in which we believe software science and engineering may develop to transform the role of software and science integration in tomorrows global information society. This book is an attempt to capture the essence on a new state of art in software science and its supporting technology. The book also aims at identifying the challenges such a technology has to master. One of the important issues addressed by this book is software development security tools and techniques."This book addresses two main themes. The first is, the discipline of informatics. Two major questions will be discussed: how can we obtain and keep track of a systematic and objective overview of the vast landscape in higher informatics education, both nationally and internationally? and would it be useful to rationalize and redesign the informatics curricula, leading to less fragmentation and more communality? The second theme is the relation between informatics and other disciplines, with the following main questions: what informatics do we need to offer a coherent curriculum which suits the needs of the actual information society with respect to specific disciplines? what is relevant in informatics and CIT to provide to others? and what informatics concepts, methods and techniques form the hard core needed in every other discipline? Electro-optical and infrared systems are fundamental in the military, medical, commercial, industrial, and private sectors. Systems Engineering and Analysis of Electro-Optical and Infrared Systems integrates solid fundamental systems engineering principles, methods, and techniques with the technical focus of contemporary electro-optical and infrared optics, imaging, and detection methodologies and systems. The book provides a running case study throughout that illustrates concepts and applies topics learned. It explores the benefits of a solid systems engineering-oriented approach focused on electro-optical and infrared systems. This book covers fundamental systems engineering principles as applied to optical systems, demonstrating how modern-day systems engineering methods, tools, and techniques can help you to optimally develop, support, and dispose of complex, optical systems. It introduces contemporary systems development paradigms such as model-based systems engineering, agile development, enterprise architecture methods, systems of systems, family of systems, rapid prototyping, and more. It focuses on the connection between the high-level systems engineering methodologies and detailed optical analytical methods to analyze, and understand optical systems performance capabilities. Organized into three distinct sections, the book covers modern, fundamental, and general systems engineering principles, methods, and techniques needed throughout an optical system’s development lifecycle (SDLC); optical systems building blocks that provide necessary optical systems analysis methods, techniques, and technical fundamentals; and an integrated case study that unites these two areas. It provides enough theory, analytical content, and technical depth that you will be able to analyze optical systems from both a systems and technical perspective.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. This long awaited second edition of a popular textbook has a simple and direct approach to the diversity and complexity of food
processing. It explains the principles of operations and illustrates them by individual processes. The new edition has been enlarged to include sections on freezing, drying, psychrometry, and a completely new section on mechanical refrigeration. All the units have been converted to SI measure. Each chapter contains unworked examples to help the student gain a grasp of the subject, and although primarily intended for the student food technologist or process engineer, this book will also be useful to technical workers in the food industry. This publication comprises the proceedings of the 29 International Conference on Conceptual Modeling (ER 2010), which was held this year in Vancouver, British Columbia, Canada. Conceptual modeling can be considered as lying at the confluence of the three main aspects of information technology applications -- the world of the stakeholders and users, the world of the developers, and the technologies available to them. Conceptual models provide abstractions of various aspects related to the development of systems, such as the application domain, user needs, database design, and software specifications. These models are used to analyze and define user needs and system requirements, to support communications between stakeholders and developers, to provide the basis for systems design, and to document the requirements for and the design rationale of developed systems. Because of their role at the junction of usage, development, and technology, conceptual models can be very important to the successful development and deployment of IT applications. Therefore, the research and development of methods, techniques, tools and languages that can be used in the process of creating, maintaining, and using conceptual models is of great practical and theoretical importance. Such work is conducted in academia, research institutions, and industry. Conceptual modeling is now applied in virtually all areas of IT applications, and spans varied domains such as organizational information systems, systems that include specialized data for spatial, temporal, and multimedia applications, and biomedical applications interested in emerging knowledge, techniques and methods. 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'05 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. This book, published by Springer since 1979, presents state-of-the-art discussions in modern genetics and genetic engineering. This focus affirms a commitment to publish important reviews of the broadest interest to geneticists and their colleagues in affiliated disciplines. Recent volumes have covered gene therapy research, genetic mapping, plant science and technology, transport protein biochemistry, and viral vectors in gene therapy, among other topics. This book, published by Springer since 1979, presents state-of-the-art discussions in modern genetics and genetic engineering. This focus affirms a commitment to publish important reviews of the broadest interest to geneticists and their colleagues in affiliated disciplines. Recent volumes have covered gene therapy research, genetic mapping, plant science and technology, transport protein biochemistry, and viral vectors in gene therapy, among other topics. The CAiSE 2004 was the 16 in the series of International Conferences on Advanced Information Systems Engineering. In the year 2004 the conference was hosted by the Faculty of Computer Science and Information Technology, Riga Technical University, Latvia. Since the late 1980s, the CAiSE conferences have provided a forum for the presentation and exchange of research results and practical experiences within the field of Information Systems Engineering. The conference theme of CAiSE 2004 was Knowledge and Model Driven Information Systems Engineering for Networked Organizations. Modern businesses and IT systems are facing an ever more complex environment characterized by openness, variety, and change. Organizations are coming less self-sufficient and increasingly dependent on business partners and other actors. These trends call for openness of business as well as IT systems, i.e. the ability to connect and interoperate with other systems. Furthermore, organizations are experiencing ever more variety in their business, in all conceivable dimensions. The different competencies required by the workforce are multiplying. In the same way, the variety in technology is overwhelming with a multitude of languages, platforms, devices, standards, and products. Moreover, organizations need to manage an environment that is
constantly changing and where lead times, product life cycles, and partner relationships are shortening. The demand of having to constantly adapt IT to changing technologies and business practices has resulted in the birth of new ideas which may have a profound impact on the information systems engineering practices in future years, such as autonomic computing, component and services marketplaces and dynamically generated software. This volume carries the proceedings of the 15th International Conference on Information Systems Development (ISD). ISD progresses rapidly, continually creating new challenges. Progress in ISD comes from research as well as from practice. The aim of the Conference is to provide an international forum for the exchange of ideas and experiences between academia and industry, and to stimulate exploration of new solutions. The 6th International Conference on Cooperative Design, Visualization and Engineering CDVE 2009 was held in central Europe - Luxembourg. Participants from five continents came together to celebrate this annual event. The papers published in the conference in this volume reflect the new progress in the following aspect. Research in developing cooperative applications is currently focusing on two directions. One is the cooperation in the software development process and the other is the variety of the targeted cooperative software products. Many papers address how to facilitate cooperation in the software engineering process particularly global software engineering. The importance of sharing information in cooperation is emphasized by the authors. For example, papers that addressed the development of sharing mental models, tools for easily shared projects, sharing links for cross-media information spaces, sharing resources and transfer of knowledge among team members etc. have attracted special attention. Many papers presented in this volume are the research results of tackling problems in developing a great variety of cooperative software products. The targeted systems are cooperative support for music creation, cooperative process management systems, cooperative visualization systems for geographic information, cooperative cultural information sharing platforms, cooperative reasoning systems, cooperative sensor networks for environment monitoring, remote cooperative video monitoring systems etc. Another aspect of the papers in this volume is dealing with the problems in later phases in the cooperative product production life cycle. The topics addressed range from partner selection for operation at the beginning, requirement gathering, requirement negotiation, to cooperative design, production to cooperative testing, and finally to cooperative system operation. 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. Mathematical Methods in Chemical and Biological Engineering describes basic to moderately advanced mathematical techniques useful for shaping the model-based analysis of chemical and biological engineering systems. Covering an ideal balance of basic mathematical principles and applications to physico-chemical problems, this book presents examples drawn from recent scientific and technical literature on chemical engineering, biological and biomedical engineering, food processing, and a variety of diffusional problems to demonstrate the real-world value of the mathematical methods. Emphasis is placed on the background and physical understanding of the problems to prepare students for future challenging and innovative applications. This volume presents papers from the 10th Working Conference of the IFIP WG 8.6 on the adoption and diffusion of information systems and technologies. It explores the dynamics of how some technological innovation efforts succeed while others fail. The book looks to expand the research agenda, paying special attention to the areas of theoretical perspectives, methodologies, and organizational sectors. This book constitutes the refereed proceedings of the 4th IFIP WG 8.1 Working Conference on Method Engineering, ME 2011, held in Paris, France, in April 2011. The 13 revised full papers and 6 short papers presented together with the abstracts of two keynote talks were carefully reviewed and selected from 30 submissions. The papers are organized in topical sections on situated method engineering, method engineering foundations, customized methods, tools for method engineering, new trends to build methods, and method engineering services. This book constitutes the refereed proceedings of the IFIP WG 8.6 International Working Conference on Transfer and Diffusion of IT, TDIT 2013, held in Bangalore, India, in June 2013. The 35 revised full papers presented together with an invited paper, 12 short papers and 3 poster papers were carefully reviewed and selected from 65 submissions. The full papers are organized in the following
topical sections: IS success and failure; studies of IT adoption; software development; IT in the public sector; and theory and methods. 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. Offers instruction in manufacturing engineering management strategies to help the student optimize future manufacturing processes and procedures. This edition includes innovations that have changed management's approach toward the uses of manufacturing engineering within the business continuum. This volume is comprised of the proceedings of the 13th International Conference on Information Systems Development held August 26th-28th, 2004, at Vilnius Gediminas Technical University, Vilnius, Lithuania. The aim of this volume is to provide a forum for the research and practices addressing current issues associated with Information Systems Development (ISD). Every day, new technologies, applications, and methods raise the standards for the quality of systems expected by organizations as well as end users. All are becoming dependent on systems reliability, scalability, and performance. Thus, it is crucial to exchange ideas and experiences, and to stimulate exploration of new solutions. This proceedings provides a forum for both technical and organizational issues. While the PSE community continues its focus on understanding, synthesizing, modeling, designing, simulating, analyzing, diagnosing, operating, controlling, managing, and optimizing a host of chemical and related industries using the systems approach, the boundaries of PSE research have expanded considerably over the years. While early PSE research was largely concerned with individual units and plants, the current research spans wide ranges of scales in size (molecules to processing units to plants to global multinational enterprises to global supply chain networks; biological cells to ecological webs) and time (instantaneous molecular interactions to months of plant operation to years of strategic planning). The changes and challenges brought about by increasing globalization and the common global issues of energy, sustainability, and environment provide the motivation for the theme of PSE2012: Process Systems Engineering and Decision Support for the Flat World. Each theme includes an invited chapter based on the plenary presentation by an eminent academic or industrial researcher. Reports on the state-of-the-art advances in the various fields of process systems engineering Addresses common global problems and the research being done to solve them. 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-
Hayes' Principles and Methods of Toxicology has long been established as a reliable reference to the concepts, methodologies, and assessments integral to toxicology. The new sixth edition has been revised and updated while maintaining the same high standards that have made this volume a benchmark resource in the field. With new authors and new chapters, it presents the latest research ideas and topics on how to enhance current database systems, improve information storage, refine existing database models, and develop advanced applications. Advanced Topics in Database Research, Volume 5 is a part of this series. Advanced Topics in Database Research, Volume 5 presents the latest research ideas and topics on database systems and applications, and provides insights into important developments in the field of database and database management. This book describes the capabilities and features of new technologies and methodologies, and presents state-of-the-art research ideas, with an emphasis on theoretical issues regarding databases and database management.

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