

Rami 4 Object Management Group

This book presents the main theoretical foundations behind smart services as well as specific guidelines and practically proven methods on how to design them. Furthermore, it gives an overview of the possible implementation architectures and shows how the designed smart services can be realized with specific technologies. Finally, it provides four specific use cases that show how smart services have been realized in practice and what impact they have within the businesses. The first part of the book defines the basic concepts and aims to establish a shared understanding of terms, such as smart services, service systems, smart service systems or cyber-physical systems. On this basis, it provides an analysis of existing work and includes insights on how an organization incorporating smart services could enhance and adjust their management and business processes. The second part on the design of smart services elaborates on what constitutes a successful smart service and describes experiences in the area of interdisciplinary teams, strategic partnerships, the overall service systems and the common data basis. In the third part, technical reference architectures are presented in detail, encompassing topics on the design of digital twins in cyber physical systems, the communication between entities and sensors in the age of Industry 4.0 as well as data management and integration. The fourth part then highlights a number of analytical possibilities that can be realized and that can constitute or be part of smart services, including machine learning and artificial intelligence methods. Finally, the applicability of the introduced design and development method is demonstrated by considering specific real-world use cases. These include services in the industrial and mobility sector, which were developed in direct cooperation with industry partners. The main target audience of this book is industry-focused readers, especially practitioners from industry, who are involved in supporting and managing digital business. These include professionals working in business development, product management, strategy, and development, ranging from middle management to Chief Digital Officers. It conveys all the basics needed for developing smart services and successfully placing them on the market by explaining technical aspects as well as showcasing practical use cases.

ETAPS 2005 was the eighth instance of the European Joint Conferences on Theory and Practice of Software. ETAPS is an annual federated conference that was established in 1998 by combining a number of existing and new conferences. This year it comprised 5 conferences (CC, ESOP, FASE, FOSSACS, TACAS), 17 satellite workshops (AVIS, BYTECODE, CEES, CLASE, CMSB, COCV, FAC, FESCA, FINCO, GCW-DSE, GLPL, LDTA, QAPL, SC, SLAP, TGC, UITP), seven invited lectures (not including those that were specific to the satellite events), and several tutorials. We received over 550 submissions to the 5 conferences this year, giving acceptance rates below 30% for each one. Congratulations to all the authors who made it to the final program! I hope that most of the other authors

still found a way of participating in this exciting event and I hope you will continue submitting. The events that comprise ETAPS address various aspects of the system development process, including specification, design, implementation, analysis and improvement. The languages, methodologies and tools which support these activities are all well within its scope. Different blends of theory and practice are represented, with an inclination towards theory with a practical motivation on the one hand and soundly based practice on the other. Many of the issues involved in software design apply to systems in general, including hardware systems, and the emphasis on software is not intended to be exclusive.

The proliferation of entrepreneurship, technological and business innovations, emerging social trends and lifestyles, employment patterns, and other developments in the global context involve creative destruction that transcends geographic and political boundaries and economic sectors and industries. This creates a need for an interdisciplinary exploration of disruptive technologies, their impacts, and their implications for various stakeholders widely ranging from government agencies to major corporations to consumer groups and individuals. *Disruptive Technology: Concepts, Methodologies, Tools, and Applications* is a vital reference source that examines innovation, imitation, and creative destruction as critical factors and agents of socio-economic growth and progress in the context of emerging challenges and opportunities for business development and strategic advantage. Highlighting a range of topics such as IT innovation, business strategy, and sustainability, this multi-volume book is ideally designed for entrepreneurs, business executives, business professionals, academicians, and researchers interested in strategic decision making using innovations and competitiveness.

This book presents an in-depth historical and analytical review of the reform process in the Russian insurance sector.

This book constitutes the refereed proceedings of the 6th International Conference on the Unified Modelling Language, UML 2003, held in San Francisco, CA, USA in October 2003. The 25 revised full papers, 4 tool papers, and 1 experience paper presented together with the abstracts of 3 invited talks and summaries on the UML 2003 workshop and tutorials were carefully reviewed and selected from initially 168 submissions. The papers are organized in topical sections on practical model management, time and quality of service, tools, composition and architecture, transformation, Web related issues, testing and validation, improving UML/OCL, consistency, and methodology.

This book covers challenges and solutions in establishing Industry 4.0 standards for Internet of Things. It proposes a clear view about the role of Internet of Things in establishing standards. The sensor design for industrial problem, challenges faced, and solutions are all addressed. The concept of digital twin and complexity in data analytics for predictive maintenance and fault prediction is also covered. The book is aimed at existing problems faced by the industry at present, with the goal of cost-efficiency and unmanned automation. It also concentrates on

predictive maintenance and predictive failures. In addition, it includes design challenges and a survey of literature.

Linux Kernel Networking takes you on a guided in-depth tour of the current Linux networking implementation and the theory behind it. Linux kernel networking is a complex topic, so the book won't burden you with topics not directly related to networking. This book will also not overload you with cumbersome line-by-line code walkthroughs not directly related to what you're searching for; you'll find just what you need, with in-depth explanations in each chapter and a quick reference at the end of each chapter. Linux Kernel Networking is the only up-to-date reference guide to understanding how networking is implemented, and it will be indispensable in years to come since so many devices now use Linux or operating systems based on Linux, like Android, and since Linux is so prevalent in the data center arena, including Linux-based virtualization technologies like Xen and KVM.

One of the most important issues businesses face is how to adapt to changing operational and administrative processes. Globalization and high competition highlight the importance of technological innovation and its contribution to the organizational performance of businesses. Technological Developments in Industry 4.0 for Business Applications is a collection of innovative research on the methods and applications of developing new services related to industrial processes in order to improve organizational well-being. It also looks at the technological, organizational, and social aspects of Industry 4.0. Highlighting a range of topics including enterprise integration, logistic models, and supply chain, this book is ideally designed for computer engineers, managers, business and IT professionals, business researchers, and post-graduate students seeking current research on the evolution and development of business applications in the modern industry era.

Access concise, yet complete clinical guidance on pediatric emergency care with Pediatric Emergency Medicine Secrets, a bestselling volume in the popular Secrets Series®. Ideal for quick review or exam prep, this updated medical reference book is an essential pocket guide covering common and unusual pediatric conditions; the user-friendly Secrets style makes it a valuable addition to your library! Focus on important topics, such as cardiac arrest, respiratory failure, neurosurgery emergencies, ophthalmology emergencies, burns/smoke inhalation, toxicology, neck and spine injuries, and much more. Apply the latest knowledge and techniques with content thoroughly updated by leaders in the field. Quickly review key concepts through a question-and-answer format, bulleted lists, mnemonics, "Key Points" summaries, lists of useful web sites, and practical tips from the authors. Enhance your reference power with a full range of well-organized essential topics in pediatric emergency medicine. Improve content knowledge with a special chapter containing "Top 100 Secrets," providing an overview of essential material for last-minute study or self-assessment.

The Internet of Things (IoT) is a network of devices and smart things that provides a pervasive environment in which people can interact with both the cyber and physical worlds. As the number and variety of connected objects continue to grow and the devices themselves become smarter, users' expectations in terms of adaptive and self-governing digital environments are also on the rise. Although, this connectivity and the

resultant smarter living is highly attractive to general public and profitable for the industry, there are also inherent concerns. The most challenging of these refer to the privacy and security of data, user trust of the digital systems, and relevant authentication mechanisms. These aspects call for novel network architectures and middleware platforms based on new communication technologies; as well as the adoption of novel context-aware management approaches and more efficient tools and devices. In this context, this book explores central issues of privacy, security and trust with regard to the IoT environments, as well as technical solutions to help address them. The main topics covered include:

- Basic concepts, principles and related technologies
- Security/privacy of data, and trust issues
- Mechanisms for security, privacy, trust and authentication
- Success indicators, performance metrics and future directions.

This reference text is aimed at supporting a number of potential audiences, including

- Network Specialists, Hardware Engineers and Security Experts
- Students, Researchers, Academics and Practitioners.

Offering timely coverage of this complex field, *Interventional Management of Chronic Visceral Pain Syndromes* is a practical, evidence-based guide for the mechanisms, presentation, diagnosis, and treatments of chronic non-malignant and malignant abdominal pain syndromes. Experienced clinicians and academic leaders in pain medicine comprehensively discuss best-practice guidelines using the newest interventional techniques, including dorsal root ganglion stimulation, high frequency spinal cord stimulation, and low-dose intrathecal infusion pumps. Coverage includes malignant and non-malignant gastrointestinal pain, malignant and non-malignant pelvic pain in males and females, rectal pain, and chest pain. Discusses key demographic characteristics as well as clinical and diagnostic presentations of the most common and esoteric visceral pain syndromes that will enable clinicians to identify pain generators. Provides a truly systematic approach to the treatment of chronic visceral pain, including the use of pharmacologic, non-interventional, interventional, and multidisciplinary therapies with evidence-based data. Covers the indications, contraindications, and outcomes results of the newest interventional treatments that all clinicians should be aware of, including neuromodulation and intrathecal pump therapy.

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

Eine nachhaltige und sichere Optimierung des maritimen Transportprozesses soll gemäß der International Maritime Organization (IMO) u.a. durch die Kopplung see- und landseitiger maritimer Systeme erfolgen. Ein erforderlicher harmonisierter Informationsaustausch zwischen existierenden und künftigen Systemen bzw. Systemkomponenten wird unter dem Begriff e-Navigation international vorangetrieben. Dabei soll nicht nur eine technische Interoperabilität zwischen den Systemen gewährleistet, sondern auch menschliche Nutzer und existierende Regularien berücksichtigt werden. Für die Unterstützung dieser Harmonisierung sowie für die Integration von Systemen in eine (bestehende) Systemumgebung muss eine umfassende Sicht auf die jeweiligen Systeme innerhalb des maritimen Kontexts aus verschiedenen technischen und nicht-technischen Perspektiven ermöglicht werden. Der in dieser Arbeit betrachtete Ansatz einer Entwicklung eines maritimen Architekturframeworks ermöglicht den Anwendern auf formale Art und Weise, die Eigenschaften von Systemen zu erfassen. Auf dieser Basis können Architekturmodelle

erstellt werden, die eine ganzheitliche Betrachtung des entsprechenden Systems innerhalb der maritimen Domäne und ihrer Merkmale ermöglicht. Im Zuge dessen unterstützt das entwickelte Prinzip verschiedene Betrachtungsmöglichkeiten zur Identifikation einer internen Konsistenz oder von Interoperabilitätsmerkmalen in und zwischen den betrachteten Systemen. Die vorgestellte Arbeit vereint Merkmale aus dem Systems Engineering, dem System of Systems Engineering sowie insbesondere aus dem Enterprise Architecture Management in einem Ansatz. Dieser beinhaltet die Entwicklung einer geeigneten Methodik zur Erfassung und Beschreibung einer Systemarchitektur sowie die Entwicklung einer Struktur zur Erstellung von Architekturmodellen unter Berücksichtigung maritimer Charakteristiken. Hinzu kommen weitere Aspekte, die im Rahmen der Arbeit Berücksichtigung finden. Dazu zählen sowohl ein Anforderungsmanagement als auch die Nutzung des Ansatzes für potentielle Analysen.

Business innovation and industrial intelligence are paving the way for a future in which smart factories, intelligent machines, networked processes and Big Data are combined to foster industrial growth. The maturity and growth of instrumentation, monitoring and automation as key technology drivers support Industry 4.0 as a viable, competent and actionable business model. This book offers a primer, helping readers understand this paradigm shift from industry 1.0 to industry 4.0. The focus is on grasping the necessary pre-conditions, development & technological aspects that conceptually describe this transformation, along with the practices, models and real-time experience needed to achieve sustainable smart manufacturing technologies. The primary goal is to address significant questions of what, how and why in this context, such as: What is Industry 4.0? What is the current status of its implementation? What are the pillars of Industry 4.0? How can Industry 4.0 be effectively implemented? How are firms exploiting the Internet of Things (IoT), Big Data and other emerging technologies to improve their production and services? How can the implementation of Industry 4.0 be accelerated? How is Industry 4.0 changing the workplace landscape? Why is this melding of the virtual and physical world needed for smart production engineering environments? Why is smart production a game-changing new form of product design and manufacturing?

The digital transformation is in full swing and fundamentally changes how we live, work, and communicate with each other. From retail to finance, many industries see an inflow of new technologies, disruption through innovative platform business models, and employees struggling to cope with the significant shifts occurring. This Fourth Industrial Revolution is predicted to also transform Logistics and Supply Chain Management, with delivery systems becoming automated, smart networks created everywhere, and data being collected and analyzed universally. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution provides a holistic overview of this vital subject clouded by buzz, hype, and misinformation. The book is divided into three themed-sections: Technologies such as self-driving cars or virtual reality are not only electrifying science fiction lovers anymore, but are also increasingly presented as cure-all remedies to supply chain challenges. In The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial

Revolution, the authors peel back the layers of excitement that have grown around new technologies such as the Internet of Things (IoT), 3D printing, Robotic Process Automation (RPA), Blockchain or Cloud computing, and show use cases that give a glimpse about the fascinating future we can expect. Platforms that allow businesses to centrally acquire and manage their logistics services disrupt an industry that has been relationship-based for centuries. The authors discuss smart contracts, which are one of the most exciting applications of Blockchain, Software as a Service (SaaS) offerings for freight procurement, where numerous data sources can be integrated and decision-making processes automated, and marine terminal operating systems as an integral node for shipments. In *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution*, insights are shared into the cold chain industry where companies respond to increasing quality demands, and how European governments are innovatively responding to challenges of cross-border eCommerce. People are a vital element of the digital transformation and must be on board to drive change. *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution* explains how executives can create sustainable impact and how competencies can be managed in the digital age - especially for sales executives who require urgent upskilling to remain relevant. Best practices are shared for organizational culture change, drawing on studies among senior leaders from the US, Singapore, Thailand, and Australia, and for managing strategic alliances with logistics service providers to offset risks and create cross-functional, cross-company transparency. *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution* provides realistic insights, a ready-to-use knowledge base, and a working vocabulary about current activities and emerging trends of the Logistics industry. Intended readers are supply chain professionals working for manufacturing, trading, and freight forwarding companies as well as students and all interested parties.

Nach Mechanisierung, Massenfertigung und Automatisierung kommt mit Industrie 4.0 jetzt die Digitalisierung. In dieser Publikation stellen namhafte Autoren die wichtigsten Bestandteile und wesentlichen Aspekte dieses übergreifenden Konzepts zur "Informatisierung der Wertschöpfungskette" vor. Stichpunkte aus dem Inhalt: Kernkonzepte und Basistechnologien // Standardisierungspfade // Internationale Konsortien und andere Initiativen (z. B. it's OWL) // Praxisberichte // Rechtliche Aspekte // Safety und Security // Ausbildung und Arbeitswelt // Analyse des derzeitigen Stellenwerts von Industrie 4.0 in der Praxis. Damit erschließt das Buch dem Leser die Potenziale, die sich aus der massiven Nutzung des Internets, der Integration von technischen Prozessen und Geschäftsprozessen, der digitalen Abbildung und Virtualisierung der realen Welt und der Möglichkeit "intelligenter" Produkte ergeben.

?This proceedings volume gathers together selected peer-reviewed papers presented at the second edition of the XXVI International Joint Conference on Industrial Engineering and Operations Management (IJCIEOM), which was

virtually held on February 22-24, 2021 with the main organization based at the Pontifical Catholic University of Rio de Janeiro, Brazil. Works cover a range of topics in industrial engineering, including operations and process management, global operations, managerial economics, data science and stochastic optimization, logistics and supply chain management, quality management, product development, strategy and organizational engineering, knowledge and information management, sustainability, and disaster management, to name a few. These topics broadly involve fields like operations, manufacturing, industrial and production engineering, and management. This book can be a valuable resource for researchers and practitioners in optimization research, operations research, and correlated fields.

This book provides formal and informal definitions and taxonomies for self-aware computing systems, and explains how self-aware computing relates to many existing subfields of computer science, especially software engineering. It describes architectures and algorithms for self-aware systems as well as the benefits and pitfalls of self-awareness, and reviews much of the latest relevant research across a wide array of disciplines, including open research challenges. The chapters of this book are organized into five parts: Introduction, System Architectures, Methods and Algorithms, Applications and Case Studies, and Outlook. Part I offers an introduction that defines self-aware computing systems from multiple perspectives, and establishes a formal definition, a taxonomy and a set of reference scenarios that help to unify the remaining chapters. Next, Part II explores architectures for self-aware computing systems, such as generic concepts and notations that allow a wide range of self-aware system architectures to be described and compared with both isolated and interacting systems. It also reviews the current state of reference architectures, architectural frameworks, and languages for self-aware systems. Part III focuses on methods and algorithms for self-aware computing systems by addressing issues pertaining to system design, like modeling, synthesis and verification. It also examines topics such as adaptation, benchmarks and metrics. Part IV then presents applications and case studies in various domains including cloud computing, data centers, cyber-physical systems, and the degree to which self-aware computing approaches have been adopted within those domains. Lastly, Part V surveys open challenges and future research directions for self-aware computing systems. It can be used as a handbook for professionals and researchers working in areas related to self-aware computing, and can also serve as an advanced textbook for lecturers and postgraduate students studying subjects like advanced software engineering, autonomic computing, self-adaptive systems, and data-center resource management. Each chapter is largely self-contained, and offers plenty of references for anyone wishing to pursue the topic more deeply.

This book presents 19 revised invited keynote lectures and revised tutorial lectures given at the 4th International Symposium on Formal Methods for

Components and Objects, FMCO 2005, Amsterdam, November 2005. The book provides a unique combination of ideas on software engineering and formal methods that reflect the current interest in the application or development of formal methods for large scale software systems such as component-based systems and object systems.

This tutorial volume originates from the 4th Advanced Course on Petri Nets, ACPN 2003, held in Eichsttt, Germany in September 2003. In addition to lectures given at ACPN 2003, additional chapters have been commissioned to give a well-balanced presentation of the state of the art in the area. This book will be useful as both a reference for those working in the area as well as a study book for the reader who is interested in an up-to-date overview of research and development in concurrent and distributed systems; of course, readers specifically interested in theoretical or applicational aspects of Petri nets will appreciate the book as well.

A comprehensive overview of the Internet of Things' core concepts, technologies, and applications Internet of Things A to Z offers a holistic approach to the Internet of Things (IoT) model. The Internet of Things refers to uniquely identifiable objects and their virtual representations in an Internet-like structure. Recently, there has been a rapid growth in research on IoT communications and networks, that confirms the scalability and broad reach of the core concepts. With contributions from a panel of international experts, the text offers insight into the ideas, technologies, and applications of this subject. The authors discuss recent developments in the field and the most current and emerging trends in IoT. In addition, the text is filled with examples of innovative applications and real-world case studies. Internet of Things A to Z fills the need for an up-to-date volume on the topic. This important book: Covers in great detail the core concepts, enabling technologies, and implications of the Internet of Things Addresses the business, social, and legal aspects of the Internet of Things Explores the critical topic of security and privacy challenges for both individuals and organizations Includes a discussion of advanced topics such as the need for standards and interoperability Contains contributions from an international group of experts in academia, industry, and research Written for ICT researchers, industry professionals, and lifetime IT learners as well as academics and students, Internet of Things A to Z provides a much-needed and comprehensive resource to this burgeoning field. This book has a focus on the development and deployment of the Industrial Internet of Things (IIoT) paradigm, discussing frameworks, methodologies, benefits and limitations, as well as providing case studies of employing the IoT vision in the industrial domain. IIoT is becoming an attractive business reality for many organisations such as manufacturing, logistics, oil and gas, energy and other utilities, mining, aviation, and many more. The opportunities for this paradigm are huge, and according to one report, the IIoT market is predicted to reach \$125 billion by 2021. The driving philosophy behind the IIoT is that smart machines are better than humans at accurately capturing, analysing and communicating real-time data. The underlying technologies include distributed computing, machine learning, artificial intelligence, and machine-to-machine communication, with a typical IIoT system consisting of intelligent systems (applications, controllers, sensors, and security mechanisms), data communication

infrastructure (cloud computing, edge computing, etc.), data analytics (to support business intelligence and corporate decision making), and most importantly the human element. The promised benefits of the IIoT include enhanced safety, better reliability, smart metering, inventory management, equipment tracking, and facilities management. There are, however, numerous issues that are also becoming the focus of active research, such as concerns regarding service availability, data security, and device communication. Lack of ubiquitous interoperability between heterogeneous devices is also a major concern. This book intends to fill a gap in the IIoT literature by providing the scientific contributions and latest developments from researchers and practitioners of international repute, focusing on frameworks, methodologies, benefits, and inherent issues/barriers to connected environments, especially in industrial settings. The intended audience includes network specialists, hardware engineers, and security experts who wish to adopt newer approaches for device connectivity, IoT security, and sensor-based devices design. University level students, researchers and practitioners will also find the latest innovation in technology and newer approaches relevant to the IIoT from a distributed computing perspective.

Directory is indexed by name (parent and subsidiary), geographic location, Standard Industrial Classification (SIC) Code, and corporate responsibility.

Verifying the security posture as a system evolves is indispensable for building deployable software systems. Traditional security testing lacks flexibility in (1) providing early feedback to the architect on the ability of the software to predict security threats so that changes are made before the system is built, (2) responding to changes in user and behavior requirements that could affect the security of software, and (3) offering real design fixes that do not merely hide the symptoms of the problem (i.e., patching). We motivate the need for an architecture-level testing for security grounded on incremental and continuous refinements to support agile principles. We use architecture as an artifact for initiating the testing process for security through subsequent and iterative refinements. We extend the use of implied scenario to reveal undesirable behavior caused by ambiguities in users' requirements and we analyze detection their security implications. This approach demonstrates how architecture-centric evaluation and analysis can assist in securing systems developed using an agile development cycle. We apply this approach to a case study to evaluate the security of identity management architectures. We reflect on the effectiveness of this approach in detecting vulnerable behaviors and the cost-effectiveness of refining the architecture before vulnerabilities are built into the system.

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.

This book focuses on new developments in polytopic projects, particularly on implementation domains and case studies, as well as high-dimensional methodology. Polytopic projects are based on a general reference architecture inspired and shared by the functional organization of organisms and enterprises as informational and cognitive systems, the scientific and engineering methodology and the operational structure of existing self-evolvable and self-sustainable systems.

System Quality and Software Architecture collects state-of-the-art knowledge on how to intertwine software quality requirements with software architecture and how quality attributes are exhibited by the architecture of the system. Contributions from leading researchers and industry evangelists detail the techniques required to achieve quality management in software architecting, and the best way to apply these techniques effectively in various application domains (especially in cloud, mobile and ultra-large-scale/internet-scale architecture) Taken together, these approaches show how to assess the value of total quality management in a

software development process, with an emphasis on architecture. The book explains how to improve system quality with focus on attributes such as usability, maintainability, flexibility, reliability, reusability, agility, interoperability, performance, and more. It discusses the importance of clear requirements, describes patterns and tradeoffs that can influence quality, and metrics for quality assessment and overall system analysis. The last section of the book leverages practical experience and evidence to look ahead at the challenges faced by organizations in capturing and realizing quality requirements, and explores the basis of future work in this area. Explains how design decisions and method selection influence overall system quality, and lessons learned from theories and frameworks on architectural quality Shows how to align enterprise, system, and software architecture for total quality Includes case studies, experiments, empirical validation, and systematic comparisons with other approaches already in practice.

Using the unique cycles of trauma framework, the 4th edition of this classic and highly acclaimed resource is thoroughly updated to bring you comprehensive coverage of cutting-edge research findings and current issues, trends, and controversies in trauma nursing. Detailed information guides you through all phases of care – from preventive care and the time of injury to the resuscitative, operative, critical, intermediate, and rehabilitative stages. Timely discussions on emerging topics such as mass casualty and rural trauma/telemedicine keep you up to date with the latest developments in the field. This practical, evidence-based reference is the most complete resource available for both novice and experienced trauma nurses working in a variety of care settings. Comprehensive coverage includes practical, clinically relevant trauma information for nurses at all levels of knowledge and experience working in a variety of settings. Evidence-based content ensures that you are using the latest and most reliable information available to provide state-of-the-art care for trauma patients. A user-friendly format, logical organization, and helpful tables and illustrations help you find information quickly and clarify key concepts and procedures. Detailed information guides you through all phases of care – from preventive care and the time of injury to the resuscitative, operative, critical, intermediate, and rehabilitative stages. Special populations coverage prepares you to meet the unique needs of pregnant, pediatric, and elderly patients, as well as bariatric patients, burn victims, patients with substance abuse issues, and organ and tissue donors. A section on Clinical Management Concepts gives you a solid understanding of key issues affecting all patients regardless of their injury, including mechanism of injury, traumatic shock, patient/family psychosocial responses to trauma, pain management, wound healing, and nutrition. A new Mass Casualty chapter prepares you to act quickly and confidently in the event of a disaster, with guidelines for initial response and sustained response, lessons learned from recent disasters, government involvement, and hazmat, bioterrorism, and nuclear-radiological preparedness. A new chapter on Rural Trauma/Telemedicine focuses on the unique nature of rural trauma care and offers strategies to help you improve healthcare delivery in this challenging environment. A new Trauma in the Bariatric Patient chapter provides the specialized information you need to meet the challenges and needs of this growing patient population.

Software Architecture for Big Data and the Cloud is designed to be a single resource that brings together research on how software architectures can solve the challenges imposed by building big data software systems. The challenges of big data on the software architecture can relate to scale, security, integrity, performance, concurrency, parallelism, and dependability, amongst others. Big data handling requires rethinking architectural solutions to meet functional and non-functional requirements related to volume, variety and velocity. The book's editors have varied and complementary backgrounds in requirements and architecture, specifically in software architectures for

cloud and big data, as well as expertise in software engineering for cloud and big data. This book brings together work across different disciplines in software engineering, including work expanded from conference tracks and workshops led by the editors. Discusses systematic and disciplined approaches to building software architectures for cloud and big data with state-of-the-art methods and techniques Presents case studies involving enterprise, business, and government service deployment of big data applications Shares guidance on theory, frameworks, methodologies, and architecture for cloud and big data

This book constitutes the proceedings of the 10th International Conference on Business Process Management, BPM 2012, held in Tallinn, Estonia, in September 2012. The 17 regular papers and 7 short papers included in this volume were carefully reviewed and selected from 126 submissions. The book also features two keynote lectures which were given at the conference. The papers are organized in topical sections named: process quality; conformance and compliance; BPM applications; process model analysis; BPM and the cloud; requirements and performance; process mining; and refactoring and optimization.

Blended learning continues to emerge as a more proactive and high quality method of teaching and learning. Yet as the academic landscape shifts towards technology-based efforts, the lack of economic support in developing countries has hindered its educational growth. *Advancing Technology and Educational Development through Blended Learning in Emerging Economies* provides an insight on blended learning approaches and its importance in the educational development of emerging economies. This book is a vital resource for researchers, academics, professionals, and students involved in the management and organizational development of technology use in educational settings.

This book presents a domain of extreme industrial and scientific interest: the study of smart systems and structures. It presents polytope projects as comprehensive physical and cognitive architectures that support the investigation, fabrication and implementation of smart systems and structures. These systems feature multifunctional components that can perform sensing, control, and actuation. In light of the fact that devices, tools, methodologies and organizations based on electronics and information technology for automation, specific to the third industrial revolution, are increasingly reaching their limits, it is essential that smart systems be implemented in industry. Polytope projects facilitate the utilization of smart systems and structures as key elements of the fourth industrial revolution. The book begins by presenting polytope projects as a reference architecture for cyber-physical systems and smart systems, before addressing industrial process synthesis in Chapter 2. Flow-sheet trees, cyclic separations and smart configurations for multi-component separations are discussed here. In turn, Chapter 3 highlights periodic features for drug delivery systems and networks of chemical reactions, while Chapter 4 applies conditioned random walks to polymers and smart materials structures. Chapter 5 examines self-assembly and self-reconfiguration at different scales from molecular to micro systems. Smart devices and technologies are the focus of chapter 6. Modular micro reactor systems and timed automata are examined in selected case studies. Chapter 7 focuses on inferential engineering designs, concept-knowledge, relational concept analysis and model driven architecture, while Chapter 8 puts the spotlight on smart manufacturing, industry 4.0,

reference architectures and models for new product development and testing. Lastly, Chapter 9 highlights the polytope projects methodology and the prospects for smart systems and structures. Focusing on process engineering and mathematical modeling for the fourth industrial revolution, the book offers a unique resource for engineers, scientists and entrepreneurs working in chemical, biochemical, pharmaceutical, materials science or systems chemistry, students in various domains of production and engineering, and applied mathematicians.

This book constitutes the refereed proceedings of the Thyrrenian International Workshop on Digital Communication, IWDC 2001, held in Taormina, Italy in September 2001. The 46 revised full papers presented are a mix of invited papers and selected submitted papers and reflect the state of the art in multiservice IP network research and development. The book offers topical sections on WDM technologies for the next generation Internet, mobile and wireless Internet access, QoS in the next generation Internet, multicast and routing in IP networks, mulitmedia services over the Internet, performance of Internet protocols, dynamic service management, and source encoding and Internet applications.

This volume provides new conceptual insights to help organizations improve health and wellbeing in society. Some chapters do this by addressing macro-level change, some by highlighting evidence-based change at the micro level, and others by extending theory and integrating perspectives that heretofore have remained separate.

This book constitutes the refereed post-conference proceedings of the 8th IFIP WG 5.5 International Precision Assembly Seminar, IPAS 2018, held in Chamonix, France, in January 2018. The 20 revised full papers were carefully reviewed and selected from numerous submissions. The papers address topics such as machine vision and metrology for assembly operations, gripping and handling technologies, numerical methods and planning in assembly, digital technologies and Industry 4.0 applications, precision assembly methods, assembly systems and platforms and human cooperation, and machine learning. They are organized in the following topical sections: design and deployment of assembly systems; human robot cooperation and machine vision; assembly methods and models; digital technologies and industry 4.0 applications; and gripping and handling solutions in assembly.

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