

## Software By Numbers Low Risk High Return Development

*This book constitutes the refereed proceedings of the 20th International Working Conference on Requirements Engineering: Foundation for Software Quality, REFSQ 2014, held in Essen, Germany, in April 2014. The 23 papers presented were carefully reviewed and selected from 89 submissions. The REFSQ conference is organised as a three-day symposium with two days devoted to scientific papers presentation with a one-day industry track in-between. Both the industry and scientific presentations concern a variety of topics, which shows the liveliness of the requirements engineering domain. These topics are for instance: scalability in RE, communication issues, compliance with law and regulations, RE for self adaptive systems, requirements traceability, new sources of requirements, domain specific RE, Natural Language issues and of course games. 'Games for RE and RE for Games' was the special topic of REFSQ 2014. This is materialized by a plenary session at the conference, and by a keynote given by Catherine Rolland, a serious games expert and project manager at KTM Advance, a French company specialized in serious games.*

*“Reading Hyper-Productive Knowledge Work Performance has influenced my thinking more than any other recent book I have read about how to transform my company’s culture to achieve higher levels of productivity. It’s like the perfect mix of Fred Brooks, W. Edwards Deming, Donald Reinertsen, David Anderson, and Jeff Sutherland all rolled into one approachable and pragmatic book. I recognized a lot of what I already knew and then was pleasantly surprised with how the authors used hyper-productivity to show how it all interconnected. All in all, it is an eye opening book that provides a concrete path to hyper-productivity.”—Curt Hibbs, Chief Agile Evangelist, Boeing This unique reference shows how to lead knowledge workers, manage knowledge work and build a hyper-productive knowledge work organization, by taming and managing the four flows of organizational performance (psychology, information, work and finance) to produce spectacular operational and financial throughput results. Inspired by his experience and knowledge gained at Borland International, where a hyper-productive level of performance was achieved resulting in the most productive software project ever documented, author Steve Tendon devised TameFlow. TameFlow is an approach that can be superimposed on any preexisting process, method, and practice to enable performance improvement by several orders of magnitude and a state of hyper-productivity. It is adaptable to nearly every industry, and can be applied to any knowledge work domain or organization that generates business value through knowledge. TameFlow blends and merges different ideas from a variety of schools of thought. It is founded in pattern theory and organizational performance patterns which are used to analyze and decompose processes, methodologies, and management practices into constituent parts to observe productivity patterns, and then they are recombined in new configurations to enable hyper-productive levels of performance. In this volume of The TameFlow Hyper-Productivity Series, the TameFlow approach is explained within the context of knowledge work performed in a software development organization. Mr. Tendon teams up with author, Wolfram Müller, a thought-leader and expert in Critical Chain and Advanced Agile Project Management to illustrate its application to Scrum, the most widely used Agile software project management framework, and to Kanban, a method used for knowledge work with an emphasis on just-in-time delivery and change management. The authors demonstrate how constraints management (TOC) can improve Scrum and Kanban in powerful ways, bringing more predictability of behavior of the system as a whole, as well as to the individuals involved. Their combination becomes a breeding ground for the development of Unity of Purpose and Community of Trust. Both Scrum and Kanban can be extended with features of the TOC, and help create a hyper-productive organization.*

*The landmark project management reference, now in a new edition Now in a Tenth Edition, this industry-leading project management “bible” aligns its streamlined approach to the latest release of the Project Management Institute’s Project Management Body of Knowledge (PMI®’s PMBOK® Guide), the new mandatory source of training for the Project Management Professional (PMP®) Certification Exam. This outstanding edition gives students and professionals a profound understanding of project management with insights from one of the best-known and respected authorities on the subject. From the intricate framework of organizational behavior and structure that can determine project success to the planning, scheduling, and controlling processes vital to effective project management, the new edition thoroughly covers every key component of the subject. This Tenth Edition features: New sections on scope changes, exiting a project, collective belief, and managing virtual teams More than twenty-five case studies, including a new case on the Iridium Project covering all aspects of project management 400 discussion questions More than 125 multiple-choice questions (PMI, PMBOK, PMP, and Project Management Professional are registered marks of the Project Management Institute, Inc.)*

*Salary surveys worldwide regularly place software architect in the top 10 best jobs, yet no real guide exists to help developers become architects. Until now. This book provides the first comprehensive overview of software architecture’s many aspects. Aspiring and existing architects alike will examine architectural characteristics, architectural patterns, component determination, diagramming and presenting architecture, evolutionary architecture, and many other topics. Mark Richards and Neal Ford—hands-on practitioners who have taught software architecture classes professionally for years—focus on architecture principles that apply across all technology stacks. You’ll explore software architecture in a modern light, taking into account all the innovations of the past decade. This book examines: Architecture patterns: The technical basis for many architectural decisions Components: Identification, coupling, cohesion, partitioning, and granularity Soft skills: Effective team management, meetings, negotiation, presentations, and more Modernity: Engineering practices and operational approaches that have changed radically in the past few years Architecture as an engineering discipline: Repeatable results, metrics, and concrete valuations that add rigor to software architecture*

**Just Enough Software Architecture**

**Computational Intelligence and Information Technology**

**Project Management**

**Scaled Agile Framework® for Lean Software and Systems Engineering**

**Software for People**

**The Art and Science of Analyzing Software Data**

**22nd International Conference, ICEIS 2020, Virtual Event, May 5–7, 2020, Revised Selected Papers**

"Agile Excellence for Product Managers" is a plain-speaking guide on how to work with Agile development teams to achieve phenomenal product success. It covers the why and how of agile development (including Scrum, XP, and Lean, ) the role of product management, release planning, and the Must-Have Reference Guide for SAFe® Practitioners "There are a lot of methods of scale out there, but the Scaled Agile Framework is the one lighting up the world." –Steve Elliot, Founder/CEO AgileCraft "You don't have to be perfect to start SAFe because you learn as you go in. Before SAFe, I would not know how to help my teams but now I have many tools to enable the teams. My job is really fun and the bottom line is I have never enjoyed my job more!" –Product Manager, Fortune 500 Enterprise Captured for the first time in print, the SAFe body of knowledge is available as a handy desktop reference to help you accomplish your mission of building better software and systems. Inside, you'll find complete coverage of what has, until now, only been available online at scaledagileframework.com. The SAFe knowledge base was developed from experience and provides proven success patterns for implementing Lean-Agile software and systems development at enterprise scale. This book provides comprehensive guidance for work at the enterprise Portfolio, Value Stream, Program, and Team levels, including the various artifacts that constitute the Framework, along with the foundational elements of values, mindset, principles, and practices. Education & Training Key to Success The practice of SAFe is spreading rapidly throughout the world. The majority of Fortune 100 U.S. companies have certified practitioners and consultants, as do an increasing percentage of the Global 1000 enterprises. Case study results—visit scaledagileframework.com/case-studies—typically include: 20—50% increase in productivity 50%+ increases in quality 30—75% faster time to market Measurable engagement and job satisfaction With results like these, the demand from enterprises seeking SAFe expertise is accelerating at a dramatic rate. Successful implementations may vary in context, but share a common attribute: a workforce well trained and educated in SAFe practices with authorized training and certification—will help you understand how to maximize the value of your role within a SAFe organization. The result is greater alignment, visibility, improved performance throughout the enterprise, and ultimately better outcomes for the business. Within the framework of Acceptance Test-Driven-Development (ATDD), customers, developers, and testers collaborate to create acceptance tests that thoroughly describe how software should work from the customer's viewpoint. By tightening the links between customers and developers, you can significantly improve both software quality and developer productivity. This is the first start-to-finish, real-world guide to ATDD for every agile project participant. Leading agile consultant Ken Pugh begins with a dialogue among a customer, developer, and tester, explaining the "what, when, and how" of ATDD and illuminating the experience of participating in it. Next, Pugh presents a practical, complete reference to each facet of ATDD, from creating simple tests to evaluating their results. He concludes with five diverse case studies, each identifying a realistic challenge with proven solutions. Coverage includes • How to develop software with fully testable requirements • How to simplify and componentize tests and use them to identify missing logic • How to test user interfaces, service implementations, and other tricky elements of software • How to identify requirements that are best handled outside software • How to present test results, evaluate them, and use them to assess a project's overall progress • How to build acceptance tests that are mutually beneficial for development organizations and customers • How to manage large projects

Apply best practices for capturing, analyzing, and implementing software requirements through visual models—and deliver better results for your business. The authors—experts in eliciting and visualizing requirements—walk you through a simple but comprehensive language of visual models that has been used on hundreds of real-world, large-scale projects. Build your fluency with core concepts—and gain essential, scenario-based context and implementation advice—as you progress through each chapter. Transcend the limitations of text-based requirements data using visual models to rigorously identify, capture, and validate requirements Get real-world guidance on best ways to use visual models—how and when, and ways to combine them for best project outcomes Practice the book's concepts as you work through chapters Change your focus from writing requirements to ensuring a complete system

Achieving Enterprise Agility

Agile Software Development

Proven Strategies for Managing Software Engineers

Hyper-Productive Knowledge Work Performance

Evaluation of Novel Approaches to Software Engineering

Pragmatic Contracting and Collaboration in Agile Software Projects

Low-Risk, High-Return Development

The Art and Science of Analyzing Software Data provides valuable information on analysis techniques often used to derive insight from software data. This book shares best practices in the field generated by leading data scientists, collected from their experience training software engineering students and practitioners to master data science. The book covers topics such as the analysis of security data, code reviews, app stores, log files, and user telemetry, among others. It covers a wide variety of techniques such as co-change analysis, text analysis, topic analysis, and concept analysis, as well as advanced topics such as release planning and generation of source code comments. It includes stories from the trenches from expert data scientists illustrating how to apply data analysis in industry and open source, present results to stakeholders, and drive decisions. Presents best practices, hints, and tips to analyze data and apply tools in data science projects Presents research methods and case studies that have emerged over the past few years to further understanding of software data Shares stories from the trenches of successful data science initiatives in industry

As long as humans write software, the key to successful software security is making the software development program process more efficient and effective. Although the approach of this textbook includes people, process, and technology approaches to software security, Practical Core Software Security: A Reference Framework stresses the people element of software security, which is still the most important part to manage as software is developed, controlled, and exploited by humans. The text outlines a step-by-step process for software security that is relevant to today ' s technical, operational, business, and development environments. It focuses on what humans can do to control and manage a secure software development process using best practices and metrics. Although security issues will always exist, students learn how to maximize an organization ' s ability to minimize vulnerabilities in software products before they are released or deployed by building security into the development process. The authors have worked with Fortune 500 companies and have often seen examples of the breakdown of security development lifecycle (SDL) practices. The text takes an experience-based approach to apply components of the best available SDL models in dealing with the problems described above. Software security best practices, an SDL model, and framework are presented in this book. Starting with an overview of the SDL, the text outlines a model for mapping SDL best practices to the software development life cycle (SDLC). It explains how to use this model to build and manage a mature SDL program. Exercises and an in-depth case study aid students in mastering the SDL model. Professionals skilled in secure software development and related tasks are in tremendous demand today. The industry continues to experience exponential demand that should continue to grow for the foreseeable future. This book can benefit professionals as much as students. As they integrate the book ' s ideas into their software security practices, their value increases to their organizations, management teams, community, and industry. About the Authors Dr. James Ransome, PhD, CISSP, CISM is a veteran of numerous chief information security officer (CISO), chief security officer (CSO), and chief production security officer (CPSO) roles, as well as an author and co-author of numerous cybersecurity books. Anmol Misra is an accomplished leader, researcher, author, and security expert with over 16 years of experience in technology and cybersecurity. Mark S. Merkow, CISSP, CISM, CSSLP has over 25 years of experience in corporate information security and 17 years in the AppSec space helping to establish and lead application security initiatives to success and sustainment.

"... an engaging book that will empower readers in both large and small software development and engineering organizations to build security into their products. ... Readers are armed with firm solutions for the fight against cyber threats." —Dr. Dena Haritos Tsamitis, Carnegie Mellon University "... a must read for security specialists, software developers and software engineers. ... should be part of every security professional ' s library." —Dr. Larry Ponemon, Ponemon Institute "... the definitive how-to guide for software security professionals. Dr. Ransome, Anmol Misra, and Brook Schoenfield deftly outline the procedures and policies needed to integrate real security into the software development process. ...A must-have for anyone on the front lines of the Cyber War ... " —Cedric Leighton, Colonel, USAF (Ret.), Cedric Leighton Associates "Dr. Ransome, Anmol Misra, and Brook Schoenfield give you a magic formula in this book - the methodology and process to build security into the entire software development life cycle so that the software is secured at the source!" —Eric S. Yuan, Zoom Video Communications There is much publicity regarding network security, but the real cyber Achilles ' heel is insecure software. Millions of software vulnerabilities create a cyber house of cards, in which we conduct our digital lives. In response, security people build ever more elaborate cyber fortresses to protect this vulnerable software. Despite their efforts, cyber fortifications consistently fail to protect our digital treasures. Why? The security industry has failed to engage fully with the creative, innovative people who write software. Core Software Security expounds developer-centric software security, a holistic process to engage creativity for security. As long as software is developed by humans, it requires the human element to fix it. Developer-centric security is not only feasible but also cost effective and operationally relevant. The methodology builds security into software development, which lies at the heart of our cyber infrastructure. Whatever development method is employed, software must be secured at the source. Book Highlights: Supplies a practitioner’s view of the SDL Considers Agile as a security enabler Covers the privacy elements in an SDL Outlines a holistic business-savvy SDL framework that includes people, process, and technology Highlights the key success factors, deliverables, and metrics for each phase of the SDL Examines cost efficiencies, optimized performance, and organizational structure of a developer-centric software security program and PSIRT Includes a chapter by noted security architect Brook Schoenfield who shares his insights and experiences in applying the book ' s SDL framework View the authors' website at http://www.androidinsecurity.com/

" Agile Software Development is a highly stimulating and rich book. The author has a deep background and gives us a tour de force of the emerging agile methods. " —Tom Gilb The agile model of software development has taken the world by storm. Now, in Agile Software Development, Second Edition, one of agile ' s leading pioneers updates his Jolt Productivity award-winning book to reflect all that ' s been learned about agile development since its original introduction. Alistair Cockburn begins by updating his powerful model of software development as a " cooperative game of invention and communication. " Among the new ideas he introduces: harnessing competition without damaging collaboration; learning lessons from lean manufacturing; and balancing strategies for communication. Cockburn also explains how the cooperative game is played in business and on engineering projects, not just software development Next, he systematically illuminates the agile model, shows how it has evolved, and answers the questions developers and project managers ask most often, including • Where does agile development fit in our organization? • How do we blend agile ideas with other ideas? • How do we extend agile ideas more broadly? Cockburn takes on crucial misconceptions that cause agile projects to fail. For example, you ' ll learn why encoding project management strategies into fixed processes can lead to ineffective strategy decisions and costly mistakes. You ' ll also find a thoughtful discussion of the controversial relationship between agile methods and user experience design. Cockburn turns to the practical challenges of constructing agile methodologies for your own teams. You ' ll learn how to tune and continuously reinvent your methodologies, and how to manage incomplete communication. This edition contains important new contributions on these and other topics: • Agile and CMMI • Introducing agile from the top down • Revisiting " custom contracts " • Creating change with " stickers " In addition, Cockburn updates his discussion of the Crystal methodologies, which utilize his " cooperative game " as their central metaphor. If you ' re new to agile development, this book will help you succeed the first time out. If you ' ve used agile methods before, Cockburn ' s techniques will make you even more effective.

Growing Software

Practical Core Software Security

The ISPMA-Compliant Study Guide and Handbook

Lean-Agile Software Development

Enterprise Information Systems

15th International Working Conference, REFSQ 2009 Amsterdam, The Netherlands, June 8-9, 2009 Proceedings

Better Collaboration for Better Software

Corey Ladas' groundbreaking paper "ScrumBan" has captured the imagination of the software development world. Scrum and agile methodologies have helped software development teams organize and become more efficient. Lean methods and Kanban also provides a powerful mechanism to identify process improvement opportunities. This book covers some of the metrics and day-to-day management techniques that make continuous improvement an achievable outcome. This book provides a series of essays that give practitioners the background needed to create more robust practices combining the best of agile and lean.

Metrics for software development are usually employed ad-hoc and without clear directions for interpreting the numbers and acting on them. Almost every other engineering discipline has clear guidelines for measuring processes and product quality. This practical book describes how to integrate processes and metrics to ensure easier and more effective enterprise software development. It crosses the divide between theory and practice and also discusses why esoteric metrics are not quality industrial software. Enterprise Software Development introduces the techniques for building, applying and interpreting metrics for the workflows across the software development life cycle phases of inception, elaboration, construction and transition for software engineering practitioners (architects, application developers, designers and project managers), academics, and students and apprentices of software engineering.

Agile techniques have demonstrated immense potential for developing more effective, higher-quality software. However, scaling these techniques to the enterprise presents many challenges. The solution is to integrate the principles and practices of agile with Agile's ideology and methods. By doing so, software organizations leverage Lean's powerful capabilities for "optimizing the whole" and managing complex enterprise projects. A combined "Lean-Agile" approach can dramatically improve business value. In this book, three expert Lean software consultants draw from their unparalleled experience to gather all the insights, knowledge, and new skills you need to succeed with Lean-Agile development. Lean-Agile extends Scrum processes with an Enterprise view based on Lean principles. The authors present crucial technical insight into emergent design, and demonstrate how to apply it to make iterative development more effective. They also identify "patterns" that can work against your goals, and they offer actionable, proven alternatives. Lean-Agile Software Development shows how to Transition to Lean Software Development quickly and successfully Manage the initiation of product development where managers work together to manage product portfolios more effectively Manage dependencies across the software development organization and with its partners and colleagues Integrate development and QA roles to improve quality and reduce risk Apply best practices for different software development teams The book's companion Web site, www.netobjectives.com/lasd, provides updates, links to related materials, and support for discussions of the book's content.

Information is considered both an essential element of organizational design and an asset to be processed and managed. Further research on and application of topics relating to the architecture, management, and use of information is important. The Handbook of Research on Information Architecture and Management in Modern Organizations focuses on information as an essential element of organizational design and emphasizes the strategic role of knowledge transfer and management in modern industries. Taking a cross-disciplinary approach to information architecture and management, this publication draws on research essential to diverse organizations and is designed for use by business professionals, researchers, academicians, and practitioners. This comprehensive reference work features key research and concepts on topics related to information functionality, information modeling, information overload, information retrieval, innovation management, organizational architecture, information systems, and applications across industries.

A Reference Framework

The TameFlow Approach and Its Application to Scrum and Kanban

The Cooperative Game

From Concept to Cash

Agile Excellence for Product Managers

Managing Risks, Optimizing Performance and Measuring Results

Visual Models for Software Requirements

*This book constitutes the proceedings of the First International Conference on Computational Intelligence and Information Technology, CIIT 2011, held in Pune, India, in November 2011. The 58 revised full papers, 67 revised short papers, and 32 poster papers presented were carefully reviewed and selected from 483 initial submissions. The papers are contributed by innovative academics and industrial experts in the field of computer science, information technology, computational engineering, mobile communication and security and offer a stage to a common forum, where a constructive dialog on theoretical concepts, practical ideas and results of the state of the art can be developed.*

*This book contains a collection of thoroughly refereed papers presented at the 5th International Conference on Evaluation of Novel Approaches to Software Engineering, ENASE 2010, held in Athens, Greece, in July 2010. The 19 revised and extended full papers were carefully selected from 70 submissions. They cover a wide range of topics, such as quality and metrics; service and Web engineering; process engineering; patterns, reuse and open source; process improvement; aspect-oriented engineering; and requirements engineering.*

*Summary Specification by Example is an emerging practice for creating software based on realistic examples, bridging the communication gap between business stakeholders and the dev teams*



building the software. In this book, author Gojko Adzic distills interviews with successful teams worldwide, sharing how they specify, develop, and deliver software, without defects, in short iterative delivery cycles. About the Technology Specification by Example is a collaborative method for specifying requirements and tests. Seven patterns, fully explored in this book, are key to making the method effective. The method has four main benefits: it produces living, reliable documentation; it defines expectations clearly and makes validation efficient; it reduces rework; and, above all, it assures delivery teams and business stakeholders that the software that's built is right for its purpose. About the Book This book distills from the experience of leading teams worldwide effective ways to specify, test, and deliver software in short, iterative delivery cycles. Case studies in this book range from small web startups to large financial institutions, working in many processes including XP, Scrum, and Kanban. This book is written for developers, testers, analysts, and business people working together to build great software. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Common process patterns How to avoid bad practices Fitting SBE in your process 50+ case studies ===== Table of Contents Part 1 Getting started Part 2 Key process patterns Part 3 Case studies Key benefits Key process patterns Living documentation Initiating the changes Deriving scope from goals Specifying collaboratively Illustrating using examples Refining the specification Automating validation without changing specifications Validating frequently Evolving a documentation system uSwitch RainStor Iowa Student Loan Sabre Airline Solutions ePlan Services Songkick Concluding thoughts

This open access book presents a set of basic techniques for estimating the benefit of IT development projects and portfolios. It also offers methods for monitoring how much of that estimated benefit is being achieved during projects. Readers can then use these benefit estimates together with cost estimates to create a benefit/cost index to help them decide which functionalities to send into construction and in what order. This allows them to focus on constructing the functionality that offers the best value for money at an early stage. Although benefits management involves a wide range of activities in addition to estimation and monitoring, the techniques in this book provides a clear guide to achieving what has always been the goal of project and portfolio stakeholders: developing systems that produce as much usefulness and value as possible for the money invested. The techniques can also help deal with vicarious motives and obstacles that prevent this happening. The book equips readers to recognize when a project budget should not be spent in full and resources be allocated elsewhere in a portfolio instead. It also provides development managers and upper management with common ground as a basis for making informed decisions.

Software by Numbers  
Software Requirements  
Security at the Source  
Core Software Security

How Successful Teams Deliver the Right Software

20th International Working Conference, REFSQ 2014, Essen, Germany, April 7-10, 2014, Proceedings

A Guide to Creating Winning Products with Agile Development Teams

A hands-on guide to testing techniques that deliver reliable software and systems Testing even a simple system can quickly turn into a potentially infinite task. Faced with tight costs and schedules, testers need to have a toolkit of practical techniques combined with hands-on experience and the right strategies in order to complete a successful project. World-renowned testing expert Rex Black provides you with the proven methods and concepts that test professionals must know. He presents you with the fundamental techniques for testing and clearly shows you how to select and apply successful strategies to test a system with budget and time constraints. Black begins by discussing the goals and tactics of effective and efficient testing. Next, he lays the foundation of his technique for risk-based testing, explaining how to analyze, prioritize, and document risks to the quality of the system using both informal and formal techniques. He then clearly describes how to design, develop, and, ultimately, document various kinds of tests. Because this is a hands-on activity, Black includes realistic, life-sized exercises that illustrate all of the major test techniques with detailed solutions. By the end of this book, you'll know more about the nuts and bolts of testing than most testers learn in an entire career, and you'll be ready to put those ideas into action on your next test project. With the help of real-world examples integrated throughout the chapters, you'll discover how to: Analyze the risks to system quality Allocate your testing effort appropriately based on the level of risk Choose the right testing strategies every time Design tests based on a system's expected behavior (black box) or internal structure (white box) Plan and perform integration testing Explore and attack the system Focus your hard work to serve the needs of the project The author's companion Web site provides exercises, tips, and techniques that can be used to gain valuable experience and effectively test software and systems. Wiley Technology Publishing Timely. Practical. Reliable. Visit the author's Web site at <http://www.rexblackconsulting.com/>

This is a practical guide for software developers, and different than other software architecture books. Here's why: It teaches risk-driven architecting. There is no need for meticulous designs when risks are small, nor any excuse for sloppy designs when risks threaten your success. This book describes a way to do just enough architecture. It avoids the one-size-fits-all process tar pit with advice on how to tune your design effort based on the risks you face. It democratizes architecture. This book seeks to make architecture relevant to all software developers. Developers need to understand how to use constraints as guidrails that ensure desired outcomes, and how seemingly small changes can affect a system's properties. It cultivates declarative knowledge. There is a difference between being able to hit a ball and knowing why you are able to hit it, what psychologists refer to as procedural knowledge versus declarative knowledge. This book will make you more aware of what you have been doing and provide names for the concepts. It emphasizes the engineering. This book focuses on the technical parts of software development and what developers do to ensure the system works not job titles or processes. It shows you how to build models and analyze architectures so that you can make principled design tradeoffs. It describes the techniques software designers use to reason about medium to large sized problems and points out where you can learn specialized techniques in more detail. It provides practical advice. Software design decisions influence the architecture and vice versa. The approach in this book embraces drill-down/pop-up behavior by describing models that have various levels of abstraction, from architecture to data structure design.

This book describes pragmatic instruments and methods that enable business experts and software engineers to develop a common understanding of the software to be created, to determine their key requirements, and to manage the project in a way that fosters trust, encourages innovation and distributes risk fairly between clients and contractors. After an introduction to the fundamentals of agile software development in Part I, Part II describes the Interaction Room, an actual room where digitalization and mobilization strategies are developed, where technology potentials are evaluated, where software projects are planned and managed, and where business and technical stakeholders can communicate face to face, visualize complex relationships intuitively, and highlight value, effort and risk drivers that are keys to the project's success. After addressing these constructive aspects, the book focuses on the commercial aspects of software development: The adVANTAGE contract model described in Part III ensures that the insight-driven innovation process of software development does not just function, but is allowed to flourish in a trusted client-contractor relationship. Even though software contracting and construction may be grounded in two different academic disciplines, they are inseparable in practice, and how they interact is illustrated in the case study of developing a private health insurance benefit system in Part IV. Ultimately though, the success of every software project depends on the skills of the stakeholders. Part V therefore describes the qualification profile that software engineers and domain experts have to satisfy today. This book is aimed at CIOs, project managers and software engineers in industrial software development practice who want to learn how to effectively deal with the inevitable uncertainty of complex projects, who want to achieve higher levels of understanding and cooperation in their relationships with clients and contractors, and who want to run lower-risk software projects despite their inherent uncertainties.

This book constitutes the refereed proceedings of the 15th International Working Conference on Requirements Engineering: Foundation for Software Quality, REFSQ 2009, held in Amsterdam, The Netherlands, in June 2009. The 14 revised full papers were carefully reviewed and selected from 49 submissions. The papers are organized in thematic sections on value and risk, change and evolution, interactions and inconsistencies, organization and structuring, experience, elicitation, research methods, behavior modeling, empirical studies, and open-source RE.

Behavior-Driven Development with Cucumber

Pragmatic Software Testing

5th International Conference, ENASE 2010, Athens, Greece, July 22-24, 2010, Revised Selected Papers

A Risk-Driven Approach

Lean Requirements Practices for Teams, Programs, and the Enterprise

Effectively Meeting Evolving Business Needs

This book covers topics such as AeroSpace Systems, Intelligent Systems, Machine Learning and Analytics, Internet of Things, Applied Media Informatics and Technology, Adaptive Control Systems, Software Engineering and Cyber-Physical Systems. Research in the discipline of Systems Engineering is an important concept in the advancement of engineering and information sciences. Systems Engineering attempts to integrate many of the traditional engineering disciplines to solve large complex functioning engineering systems, dependent on components from all the disciplines. The research papers contained in these proceedings reflect the state of the art in Systems Engineering from all over the world and serve as vital references to researchers to follow. This book is a very good resource for graduate students, researchers and scholars who want to learn about the most recent development in the fields.

Software by NumbersLow-Risk, High-Return DevelopmentPrentice Hall Professional

Most companies developing software employ something they call "Agile." But there's widespread misunderstanding of what Agile is and how to use it. If you want to improve your software development team's agility, this comprehensive guidebook's clear, concrete, and detailed guidance explains what to do and why, and when to make trade-offs. In this thorough update of the classic Agile how-to guide, James Shore provides no-nonsense advice on Agile adoption, planning, development, delivery, and management taken from over two decades of Agile experience. He brings the latest ideas from Extreme Programming, Scrum, Lean, DevOps, and more into a cohesive whole. Learn how to successfully bring Agile development to your team and organization--or discover why Agile might not be for you. This book explains how to: Improve agility: create the conditions necessary for Agile to succeed and scale in your organization Focus on value: work as a team, understand priorities, provide visibility, and improve continuously Deliver software reliably: share ownership, decrease development costs, evolve designs, and deploy continuously Optimize value: take ownership of product plans, budgets, and experiments--and produce market-leading software

- Opens the black box of methodologies and demonstrates that software development is fundamentally a value creation process - Covers new and radical approaches to software development that respond to business demands for shorter investment periods and increased agility - Provides software engineers tools for understanding enterprise-level value creation and managing financial objectives

Requirements Engineering: Foundation for Software Quality

SAFe® 4.0 Reference Guide

Becoming an Effective and Efficient Test Professional

A Systems Approach to Planning, Scheduling, and Controlling

Effective Methods for Software Testing

The Art of Agile Development

Agile Software Requirements

**The highly competitive and globalized software market is creating pressure on software companies. Given the current boundary conditions, it is critical to continuously increase time-to-market and reduce development costs. In parallel, driven by private life experiences with mobile computing devices, the World Wide Web and software-based services, peoples' general expectations with regards to software are growing. They expect software that is simple and joyful to use. In the light of the changes that have taken place in recent years, software companies need to fundamentally reconsider the way they develop and deliver software to their customers. This book introduces fundamentals, trends and best practices in the software industry from a threefold perspective which equally takes into account design, management, and development of software. It demonstrates how cross-functional integration can be leveraged by software companies to successfully build software for people. Professionals from business and academia give an overview on state-of-the-art knowledge and report on key insights from their real-life experience. They provide guidance and hands-on recommendation on how to create winning products. This combined perspective fosters the transfer of knowledge between research and practice and offers a high practical value for both sides. The book targets both, practitioners and academics looking for successfully building software in the future. It is directed at Managing Directors of software companies, Software Project Managers, Product Managers and Designers, Software Developers as well as academics and students in the area of Software and Information Systems Engineering, Human Computer Interaction (HCI), and Innovation Management.**

**The all-inclusive guide to exceptional project management The Fast Forward MBA in Project Management is the comprehensive guide to real-world project management methods, tools, and techniques. Practical, easy-to-use, and deeply thorough, this book gives you answers you need now. You'll find the cutting-edge ideas and hard-won wisdom of one of the field's leading experts, delivered in short, lively segments that address common management issues. Brief descriptions of important concepts, tips on real-world applications, and compact case studies illustrate the most sought-after skills and the pitfalls you should watch out for. This new fifth edition features new case studies, new information on engaging stakeholders, change management, new guidance on using Agile techniques, and new content that integrates current events and trends in the project management sphere. Project management is a complex role, with seemingly conflicting demands that must be coordinated into a single, overarching, executable strategy -- all within certain time, resource, and budget constraints. This book shows you how to get it all together and get it done, with expert guidance every step of the way. Navigate complex management issues effectively Master key concepts and real-world applications Learn from case studies of today's leading experts Keep your project on track, on time, and on budget From finding the right sponsor to clarifying objectives to setting a realistic schedule and budget projection, all across different departments, executive levels, or technical domains, project management incorporates a wide range of competencies. The Fast Forward MBA in Project Management shows you what you need to know, the best way to do it, and what to watch out for along the way.**

**As the technology leader at a small software company, you need to focus on people, products, processes, and technology as you bring your software to market, while doing your best to put out fires and minimize headaches. Growing Software is your guide to juggling the day-to-day challenges of running a software company while managing those long-term problems and making sure that your business continues to grow. With practical, hands-on advice, Growing Software will teach you how to build and lead an effective team, define and sell your products, work with everyone from customers to CEOs, and ensure high-quality results. Instead of learning by trial and error, you'll benefit from author Louis Testa's 20+ years of management experience. Testa combines big-picture advice, specific solutions, and real-life anecdotes to teach you how to: -Work effectively with your CEO and executive team -Improve development team efficiency and enthusiasm -Evaluate your software methodology to improve effectiveness and safeguard against failure -Use product prototypes to bridge the gap between marketing and engineering -Defuse technology time bombs Whether you're new to managing software or newly lost, Growing Software will help you and your growing company thrive.**

**In order to maximize IT resources and justify IT expenditures, CIO's and other IT managers must be able to identify meaningful metrics and explain them in a way that management can understand. The Business Value of IT: Managing Risks, Optimizing Performance, and Measuring Results solves this problem by providing practical answers to these questions: What does IT contribute to the business? Why should we care about IT governance? How can we best measure IT performance? How do we mitigate the risks associated with change? Leading consultants Michael D. Harris, David E. Herron, and Stasia Iwanicki share their real-world experiences to explain how you can demonstrate IT's value, and potentially find extra value you didn't know your IT organization creates. They also show how to apply risk management to process improvement and avoid unintended consequences of process improvement programs. The text provides the understanding required to discover the processes necessary to: prioritize your organization's IT activities. identify alternative measurement frameworks, and evaluate the best approaches to outsourcing. Many IT organizations have successfully implemented the techniques described in this book to increase their business value. This work identifies the organizational and cultural obstacles you need to remove to get started along the same path.**

First International Conference, CIIT 2011, Pune, India, November 7-8, 2011. Proceedings

Fundamentals of Software Architecture

Includes Complete Guidelines, Checklists, and Templates

Implementing Lean Software Development

The Fast Forward MBA in Project Management

Software Product Management

Metrics-driven Enterprise Software Development

This book gives a comprehensive overview on Software Product Management (SPM) for beginners as well as best practices, methodology and in-depth discussions for experienced product managers. This includes product strategy, product planning, participation in strategic management activities and orchestration of the functional units of the company. The book is based on the results of the International Software Product Management Association (ISPMA) which is led by a group of SPM experts from industry and research with the goal to foster software product management excellence across industries. This book can be used as textbook for ISPMA-based education and as guide for anybody interested in SPM as one of the most exciting and challenging disciplines in the business of software. Hans-Bernd Kittlaus is the Chairman of ISPMA and owner and managing director of InnoTivum Consulting, Germany. Samuel Fricker is Board Member of ISPMA and Professor at FHNW, Switzerland.

Now in its third edition, this classic guide to software requirements engineering has been fully updated with new topics, examples, and guidance. Two leaders in the requirements community have teamed up to deliver a contemporary set of practices covering the full range of requirements development and management activities on software projects. Describes practical, effective, field-tested techniques for managing the requirements engineering process from end to end. Provides examples demonstrating how requirements "good practices" can lead to fewer change requests, higher customer satisfaction, and lower development costs. Fully updated with contemporary examples and many new practices and techniques. Describes how to apply effective requirements practices to agile projects and numerous other special project situations. Targeted to business analysts, developers, project managers, and other software project stakeholders who have a general understanding of the software development process. Shares the insights gleaned from the authors' extensive experience delivering hundreds of software-requirements training courses, presentations, and webinars. New chapters are included on specifying data requirements, writing high-quality functional requirements, and requirements reuse.

Considerable depth has been added on business requirements, elicitation techniques, and nonfunctional requirements. In addition, new chapters recommend effective requirements practices for various special project situations, including enhancement and replacement, packaged solutions, outsourced, business process automation, analytics and reporting, and embedded and other real-time systems projects.

Written by the founder and executive director of the Quality Assurance Institute, which sponsors the most widely accepted certification program for software testing Software testing is a weak spot for most developers, and many have no system in place to find and correct defects quickly and efficiently This comprehensive resource provides step-by-step guidelines, checklists, and templates for each testing activity, as well as a self-assessment that helps readers identify the sections of the book that respond to their individual needs Covers the latest regulatory developments affecting software testing, including Sarbanes-Oxley Section 404, and provides guidelines for agile testing and testing for security, internal controls, and data warehouses CD-ROM with all checklists and templates saves testers countless hours of developing their own test documentation Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

"This remarkable book combines practical advice, ready-to-use techniques, and a deep understanding of why this is the right way to develop software. I have seen software teams transformed by the ideas in this book." --Mike Cohn, author of Agile Estimating and Planning "As a lean practitioner myself, I have loved and used their first book for years. When this second book came out, I was delighted that it was even better. If you are interested in how lean principles can be useful for software development organizations, this is the book you are looking for. The Poppendiecks offer a beautiful blend of history, theory, and practice." --Alan Shalloway, coauthor of Design

Patterns Explained "I've enjoyed reading the book very much. I feel it might even be better than the first lean book by Tom and Mary, while that one was already exceptionally good! Mary especially has a lot of knowledge related to lean techniques in product development and manufacturing. It's rare that these techniques are actually translated to software. This is something no other book does well (except their first book)." --Bas Vodde "The new book by Mary and Tom Poppendieck provides a well-written and comprehensive introduction to lean principles and selected practices for software managers and engineers. It illustrates the application of the values and practices with well-suited success stories. I enjoyed reading it." --Roman Pichler "In *Implementing Lean Software Development*, the Poppendiecks explore more deeply the themes they introduced in *Lean Software Development*. They begin with a compelling history of lean thinking, then move to key areas such as value, waste, and people. Each chapter includes exercises to help you apply key points. If you want a better understanding of how lean ideas can work with software, this book is for you." --Bill Wake, independent consultant In 2003, Mary and Tom Poppendieck's *Lean Software Development* introduced breakthrough development techniques that leverage Lean principles to deliver unprecedented agility and value. Now their widely anticipated sequel and companion guide shows exactly how to implement Lean software development, hands-on. This new book draws on the Poppendiecks' unparalleled experience helping development organizations optimize the entire software value stream. You'll discover the right questions to ask, the key issues to focus on, and techniques proven to work. The authors present case studies from leading-edge software organizations, and offer practical exercises for jumpstarting your own Lean initiatives. Managing to extend, nourish, and leverage agile practices Building true development teams, not just groups Driving quality through rapid feedback and detailed discipline Making decisions Just-in-Time, but no later Delivering fast: How PatientKeeper delivers 45 rock-solid releases per year Making tradeoffs that really satisfy customers *Implementing Lean Software Development* is indispensable to anyone who wants more effective development processes—managers, project leaders, senior developers, and architects in enterprise IT and software companies alike.

With Benefit Points and Size Points

Specification by Example

Tamed Agility

Handbook of Research on Information Architecture and Management in Modern Organizations

Scrumban - Essays on Kanban Systems for Lean Software Development

The Australian Accountant

Benefit/cost-driven Software Development

"We need better approaches to understanding and managing software requirements, and Dean provides them in this book. He draws ideas from three very useful intellectual pools: classical management practices, Agile methods, and lean product development. By combining the strengths of these three approaches, he has produced something that works better than any one in isolation." --From the Foreword by Don Reinertsen, President of Reinertsen & Associates; author of *Managing the Design Factory*; and leading expert on rapid product development Effective requirements discovery and analysis is a critical best practice for serious application development. Until now, however, requirements and Agile methods have rarely coexisted peacefully. For many enterprises considering Agile approaches, the absence of effective and scalable Agile requirements processes has been a showstopper for Agile adoption. In *Agile Software Requirements*, Dean Leffingwell shows exactly how to create effective requirements in Agile environments. Part I presents the "big picture" of Agile requirements in the enterprise, and describes an overall process model for Agile requirements at the project team, program, and portfolio levels Part II describes a simple and lightweight, yet comprehensive model that Agile project teams can use to manage requirements Part III shows how to develop Agile requirements for complex systems that require the cooperation of multiple teams Part IV guides enterprises in developing Agile requirements for ever-larger "systems of systems," application suites, and product portfolios This book will help you leverage the benefits of Agile without sacrificing the value of effective requirements discovery and analysis. You'll find proven solutions you can apply right now—whether you're a software developer or tester, executive, project/program manager, architect, or team leader.

This book constitutes extended, revised and selected papers from the 22nd International Conference on Enterprise Information Systems, ICEIS 2020, held online during May 5-7, 2020. The 41 papers presented in this volume were carefully reviewed and selected for inclusion in this book from a total of 255 submissions. They were organized in topical sections as follows: database and information systems integration; artificial intelligence and decision support systems; information systems analysis and specification; software agents and internet computing; human-computer interaction; and enterprise architecture.

Master BDD to deliver higher-value software more quickly To develop high-value products quickly, software development teams need better ways to collaborate. Agile methods like Scrum and Kanban are helpful, but they're not enough. Teams need better ways to work inside each sprint or work item. Behavior-driven development (BDD) adds just enough structure for product experts, testers, and developers to collaborate more effectively. Drawing on extensive experience helping teams adopt BDD, Richard Lawrence and Paul Rayner show how to explore changes in system behavior with examples through conversations, how to capture your examples in expressive language, and how to flow the results into effective automated testing with Cucumber. Where most BDD resources focus on test automation, this guide goes deep into how BDD changes team collaboration and what that collaboration looks like day to day. Concrete examples and practical advice will prepare you to succeed with BDD, whatever your context or role. · Learn how to collaborate better by using concrete examples of system behavior · Identify your project's meaningful increment of value so you're always working on something important · Begin experimenting with BDD slowly and at low risk · Move smoothly from informal examples to automated tests in Cucumber · Use BDD to deliver more frequently with greater visibility · Make Cucumber scenarios more expressive to ensure you're building the right thing · Grow a Cucumber suite that acts as high-value living documentation · Sustainably work with complex scenario data · Get beyond the "mini-waterfalls" that often arise on Scrum teams

Right Your Software and Transform Your Career *Righting Software* presents the proven, structured, and highly engineered approach to software design that renowned architect Juval Löwy has practiced and taught around the world. Although companies of every kind have successfully implemented his original design ideas across hundreds of systems, these insights have never before appeared in print. Based on first principles in software engineering and a comprehensive set of matching tools and techniques, Löwy's methodology integrates system design and project design. First, he describes the primary area where many software architects fail and shows how to decompose a system into smaller building blocks or services, based on volatility. Next, he shows how to flow an effective project design from the system design: how to accurately calculate the project duration, cost, and risk; and how to devise multiple execution options. The method and principles in *Righting Software* apply regardless of your project and company size, technology, platform, or industry. Löwy starts the reader on a journey that addresses the critical challenges of software development today by righting software systems and projects as well as careers—and possibly the software industry as a whole. Software professionals, architects, project leads, or managers at any stage of their career will benefit greatly from this book, which provides guidance and knowledge that would otherwise take decades and many projects to acquire. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Fundamentals, Trends and Best Practices

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The Business Value of IT

Lean-Agile Acceptance Test-Driven-Development

Righting Software

An Engineering Approach