Metrics And Models In Software Quality Engineering 2nd Edition

The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations
Using Software Metrics to Characterize, Evaluate, and Improve the Design of Object-Oriented Systems
Software Metrics
Software Reliability
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Implementing the Stakeholder based Goal-Question-Metric (GQM) Measurement Model for Software Projects
How Google Runs Production Systems
Metrics and Models for Evaluating the Quality and Effectiveness of ERP Software
Tutorial on Models and Metrics for Software Management and Engineering
An Analysis and Evaluation
A Guide to Planning, Analysis, and Application
Second International Conference, ICT Innovations 2010, Ohrid Macedonia, September 12-15, 2010. Revised Selected Papers
Applied Software Measurement
In Large Scale and Complex Software-intensive Systems
A Rigorous and Practical Approach
Enhancing Defense System Reliability
ROI of Software Process Improvement
Software Engineering Measurement
Measures of Complexity
Software Metrics
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Metrics for Project Managers and Software Engineers
A comparison of techniques for developing predictive models of software metrics
Methods and Metrics
Software Quality Assurance and Measurement
Prediction Models for Software Metrics

Six Sigma
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The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations IT Revolution
The modern field of software metrics emerged from the computer modeling and "statistical thinking" services of the 1980s. As the field evolved, metrics programs were integrated with project management, and metrics grew to be a major tool in the managerial decision-making process of software companies. Now practitioners in the software industry have

Using Software Metrics to Characterize, Evaluate, and Improve the Design of Object-Oriented Systems CRC Press
Object-oriented (OO) metrics are an integral part of object technology -- at the research level and in commercial software development projects. This book offers theoretical and empirical tips and facts for creating an OO complexity metrics (measurement) program, based on a review of existing research from the last several years. KEY TOPICS: Covers moving through object-oriented concepts as they related to managing the project lifecycle; the framework in which metrics exist; structural complexity metrics for traditional systems; OO product metrics; and current industrial applications. MARKET: For software developers, programmers, and managers.

Software Metrics CRC Press
Enterprise resource planning (ERP) is a class of integrated software that uses software technologies to implement real-time management of business processes in an organization. ERPs normally cut across organizations, making them large and complex. Software researchers have for many years established that complexity affects software quality negatively and must therefore be controlled with novel metrics and models of evaluation that can determine when the software is at acceptable levels of quality and when not. Metrics and Models for Evaluating the Quality and Effectiveness of ERP Software is a critical scholarly publication that examines ERP development, performance, and challenges in business settings to help improve decision making in organizations that have embraced ERPs, improve the efficiency and effectiveness of their activities, and improve their return on investments (ROI). Highlighting a wide range of topics such as data mining, higher education, and security, this book is essential for professionals, software developers, researchers, academicians, and security professionals.
Software Reliability J. Ross Publishing
Software Quality Assurance in Large Scale and Complex Software-intensive Systems presents novel and high-quality research related approaches that relate the quality of software architecture to system requirements, system architecture and enterprise-architecture, or software testing. Modern software has become complex and adaptable due to

the emergence of globalization and new software technologies, devices and networks. These changes challenge both traditional software quality assurance techniques and software engineers to ensure software quality when building today (and tomorrow's) adaptive, context-sensitive, and highly diverse applications. This edited volume presents state of the art techniques, methodologies, tools, best practices and guidelines for software quality assurance and offers guidance for future software engineering research and practice. Each contributed chapter considers the practical application of the topic through case studies, experiments, empirical validation, or systematic comparisons with other approaches already in practice. Topics of interest include, but are not limited, to: quality attributes of system/software architectures; aligning enterprise, system, and software architecture from the point of view of total quality; design decisions and their influence on the quality of system/software architecture; methods and processes for evaluating architecture quality; quality assessment of legacy systems and third party applications; lessons learned and empirical validation of theories and frameworks on architectural quality; empirical validation and testing for assessing architecture quality. Focused on quality assurance at all levels of software design and development Covers domain-specific software quality assurance issues e.g. for cloud, mobile, security, context-sensitive, mash-up and autonomic systems Explains likely trade-offs from design decisions in the context of complex software system engineering and quality assurance Includes practical case studies of software quality assurance for complex, adaptive and context-critical systems

Software Development Metrics World Scientific

ASQ 2007 CROSBY MEDAL WINNER! An Integrated Technology for Delivering Better Software—Cheaper and Faster! This book presents an integrated technology, Design for Trustworthy Software (DFTS), to address software quality issues upstream such that the goal of software quality becomes that of preventing bugs in implementation rather than finding and eliminating them during and after implementation. The thrust of the technology is that major quality deployments take place before a single line of code is written! This customer-oriented integrated technology can help deliver breakthrough results in cost, quality, and delivery schedule thus meeting and exceeding customer expectations. The authors describe the principles behind the technology as well as their applications to actual software design problems. They present illustrative case studies covering various aspects of DFTS technology including CoSQ, AHP, TRIZ, FMEA, QFD, and Taguchi Methods and provide ample questions and exercises to test the readers understanding of the material in addition to detailed examples of the applications of the technology. The book can be used to impart organization-wide learning including training for DFTS Black Belts and Master Black Belts. It helps you gain rapid mastery, so you can deploy DFTS Technology quickly and successfully. Learn how to • Plan, build, maintain, and improve your trustworthy software development system • Adapt best practices of quality, leadership, learning, and management for the unique software development milieu • Listen to the customer's voice, then guide user expectations to realizable,

reliable software products • Refocus on customer-centered issues such as reliability, dependability, availability, and upgradeability • Encourage greater design creativity and innovation • Validate, verify, test, evaluate, integrate, and maintain software for trustworthiness • Analyze the financial impact of software quality • Prepare your leadership and infrastructure for DFTS Design for Trustworthy Software will help you improve quality whether you develop in-house, outsource, consult, or provide support. It offers breakthrough solutions for the entire spectrum of software and quality professionals—from developers to project leaders, chief software architects to customers. The American Society for Quality (ASQ) is the world's leading authority on quality which provides a community that advances learning, quality improvement, and knowledge exchange to improve business results, and to create better workplaces and communities worldwide. The Crosby Medal is presented to the individual who has authored a distinguished book contributing significantly to the extension of the philosophy and application of the principles, methods, or techniques of quality management. Bijay K. Jayaswal, CEO of Agilenty Consulting Group, has held senior executive positions and consulted on quality and strategy for 25 years. His expertise includes value engineering, process improvement, and product development. He has directed MBA and Advanced Management programs, and helped to introduce enterprise-wide reengineering and Six Sigma initiatives. Dr. Peter C. Patton, Chairman of Agilenty Consulting Group, is Professor of Quantitative Methods and Computer Science at the University of St. Thomas. He served as CIO of the University of Pennsylvania and CTO at Lawson Software, and has been involved with software development since 1955.

Conceptual Modeling - ER '98 University of Bamberg Press

The Second Edition of Johnny Saldaña's international bestseller provides an in-depth guide to the multiple approaches available for coding qualitative data. Fully up to date, it includes new chapters, more coding techniques and an additional glossary. Clear, practical and authoritative, the book: -describes how coding initiates qualitative data analysis -demonstrates the writing of analytic memos -discusses available analytic software -suggests how best to use The Coding Manual for Qualitative Researchers for particular studies. In total, 32 coding methods are profiled that can be applied to a range of research genres from grounded theory to phenomenology to narrative inquiry. For each approach, Saldaña discusses the method's origins, a description of the method, practical applications, and a clearly illustrated example with analytic follow-up. A unique and invaluable reference for students, teachers, and practitioners of qualitative inquiry, this book is essential reading across the social sciences.

Software Metrics and Software Metrology Springer Science & Business Media

The role of metrics and models in software development; Software metrics; Measurement and analysis; Small scale experiments, micro-models of effort, and programming techniques; Macro-models of productivity; Macro-models for effort estimation; Defect models; The future of software engineering metrics and models; References; Appendices; Index.

The Coding Manual for Qualitative Researchers National Academy Press

The modern field of software metrics emerged from the computer modeling and "statistical thinking" services of the 1980s. As the field evolved, metrics programs were integrated with project management, and metrics grew to be a major tool in the managerial decision-making process of software companies. Now practitioners in the software industry have

Assuring Productivity and Quality John Wiley & Sons

Revised and updated for professional software engineers, systems analysts and project managers, this highly acclaimed book provides key concepts of software reliability and practical solutions for measuring reliability.

Metrics and Models in Software Quality Engineering Springer Science & Business Media

Summary Software Development Metrics is a handbook for anyone who needs to track and guide software development and delivery at the team level, such as project managers and team leads. New development practices, including "agile" methodologies like Scrum, have redefined which measurements are most meaningful and under what conditions you can benefit from them. This practical book identifies key characteristics of organizational structure, process models, and development methods so that you can select the appropriate metrics for your team. It describes the uses, mechanics, and common abuses of a number of metrics that are useful for steering and for monitoring process improvement. The insights and techniques in this book are based entirely on field experience. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book When driving a car, you are less likely to speed, run out of gas, or suffer engine failure because of the measurements the car reports to you about its condition. Development teams, too, are less likely to fail if they are measuring the parameters that matter to the success of their projects. This book shows you how. Software Development Metrics teaches you how to gather, analyze, and effectively use the metrics that define your organizational structure, process models, and development methods. The insights and examples in this book are based entirely on field experience. You'll learn practical techniques like building tools to track key metrics and developing data-based early warning systems. Along the way, you'll learn which metrics align with different development practices, including traditional and adaptive methods. No formal experience with developing or applying metrics is assumed. What's Inside Identify the most valuable metrics for your team and process Differentiate "improvement" from "change" Learn to interpret and apply the data you gather Common pitfalls and anti-patterns About the Author Dave Nicolette is an organizational transformation consultant, team coach, and trainer. Dave is active in the agile and lean software communities. Table of Contents Making metrics useful Metrics for steering Metrics for improvement Putting the metrics to work Planning predictability Reporting outward and upward

Software Development Metrics CRC Press

An indispensable addition to any project manager, software engineering or computer science bookshelf, this book presents the only broad-ranging economic analysis of major international SPI methods and the first large-scale

economic analysis of mandatory U.S. government standards.

Metrics for Process Models Itp - Media
This tutorial presents a new, quantitative approach to software management and software engineering that has taken shape over the past few years.

Software Quality Assurance Addison-Wesley
The idea that “measuring quality is the key to developing high-quality software systems” is gaining relevance. Moreover, it is widely recognised that the key to obtaining better software systems is to measure the quality characteristics of early artefacts, produced at the conceptual modelling phase. Therefore, improving the quality of conceptual models is a major step towards the improvement of software system development. Since the 1970s, software engineers had been proposing high quantities of metrics for software products, processes and resources but had not been paying any special attention to conceptual modelling. By the mid-1990s, however, the need for metrics for conceptual modelling had emerged. This book provides an overview of the most relevant existing proposals of metrics for conceptual models, covering conceptual models for both products and processes. Contents:Towards a Framework for Conceptual Modelling Quality (M Piattini et al.)A Proposal of a Measure of Completeness for Conceptual Models (O Dieste et al.)Metrics for Use Cases: A Survey of Current Proposals (B Bernárdez et al.)Defining and Validating Metrics for UML Class Diagrams (M Genero et al.)Measuring OCL Expressions: An Approach Based on Cognitive Techniques (L Reynoso et al.)Metrics for Datawarehouses Conceptual Models (M Serrano et al.)Metrics for UML Statechart Diagrams (J A Cruz-Lemus et al.)Metrics for Software Process Models (F García et al.) Readership: Senior undergraduates and graduate students in software engineering; PhD students, researchers, analysts, designers, software engineers and those responsible for quality and auditing. Key Features:Presents the most relevant existing proposals of metrics for conceptual models, covering conceptual models for both products and processesProvides the most current bibliography on this subjectThe only book to focus on the quality aspects of conceptual modelsKeywords:Conceptual Model;Quality;Metrics;UML;OCL;Empirical Research

Reliability Growth CRC Press
Most of the software measures currently proposed to the industry bring few real benefits to either software managers or developers. This book looks at the classical metrology concepts from science and engineering, using them as criteria to propose an approach to analyze the design of current software measures and then design new software measures (illustrated with the design of a software measure that has been adopted as an ISO measurement standard). The book includes several case studies analyzing strengths and weaknesses of some of the software measures most often quoted. It is meant for software quality specialists and process improvement analysts and managers.

Software Metrics Simon and Schuster
This book presents a comprehensive international overview of software quality assurance and metrics practice with contributions from around the world. The combination of the international perspective and practical case studies presented here will make

this book invaluable to all practitioners and students in software engineering.
Implementing the Stakeholder based Goal-Question-Metric (GQM) Measurement Model for Software Projects Springer Science & Business Media
Going where no book on software measurement and metrics has previously gone, this critique thoroughly examines a number of bad measurement practices, hazardous metrics, and huge gaps and omissions in the software literature that neglect important topics in measurement. The book covers the major gaps and omissions that need to be filled if data about software development is to be useful for comparisons or estimating future projects. Among the more serious gaps are leaks in reporting about software development efforts that, if not corrected, can distort data and make benchmarks almost useless and possibly even harmful. One of the most common leaks is that of unpaid overtime. Software is a very labor-intensive occupation, and many practitioners work very long hours. However, few companies actually record unpaid overtime. This means that software effort is underreported by around 15%, which is too large a value to ignore. Other sources of leaks include the work of part-time specialists who come and go as needed. There are dozens of these specialists, and their combined effort can top 45% of total software effort on large projects. The book helps software project managers and developers uncover errors in measurements so they can develop meaningful benchmarks to estimate software development efforts. It examines variations in a number of areas that include: Programming languages Development methodology Software reuse Functional and nonfunctional requirements Industry type Team size and experience Filled with tables and charts, this book is a starting point for making measurements that reflect current software development practices and realities to arrive at meaningful benchmarks to guide successful software projects.
How Google Runs Production Systems Benjamin-Cummings Publishing Company
Winner of the Shingo Publication Award Accelerate your organization to win in the marketplace. How can we apply technology to drive business value? For years, we've been told that the performance of software delivery teams doesn't matter—that it can't provide a competitive advantage to our companies. Through four years of groundbreaking research to include data collected from the State of DevOps reports conducted with Puppet, Dr. Nicole Forsgren, Jez Humble, and Gene Kim set out to find a way to measure software delivery performance—and what drives it—using rigorous statistical methods. This book presents both the findings and the science behind that research, making the information accessible for readers to apply in their own organizations. Readers will discover how to measure the performance of their teams, and what capabilities they should invest in to drive higher performance. This book is ideal for management at every level.
Metrics and Models for Evaluating the Quality and Effectiveness of ERP Software "O'Reilly Media, Inc."
Metrics and Models in Software Quality EngineeringAddison-Wesley Professional
Tutorial on Models and Metrics for Software Management and Engineering McGraw-Hill Companies

This is the digital version of the printed book (Copyright © 2003). To succeed in the software industry, managers need to cultivate a reliable development process. By measuring what teams have achieved on previous projects, managers can more accurately set goals, make bids, and ensure the successful completion of new projects. Acclaimed long-time collaborators Lawrence H. Putnam and Ware Myers present simple but powerful measurement techniques to help software managers allocate limited resources and track project progress. Drawing new findings from an extensive database of software project metrics, the authors demonstrate how readers can control projects with just Five Core Metrics –Time, Effort, Size, Reliability, and Process Productivity. With these metrics, managers can adjust ongoing projects to changing conditions–surprises that would otherwise cause project failure.

An Analysis and Evaluation Addison-Wesley Professional

The product of many years of practical experience and research in the software measurement business, this technical reference helps you select what metrics to collect, how to convert measurement data to management information, and provides the statistics necessary to perform these conversions. The author explains how to manage software development measurement systems, how to build software measurement tools and standards, and how to construct controlled experiments using standardized measurement tools. There are three fundamental questions that this book seeks to answer. First, exactly how do you get the measurement data? Second, how do you convert the data from the measurement process to information that you can use to manage the software development process? Third, how do you manage all of the data? Millions of dollars are being spent trying to secure software systems. When suitable instrumentation is placed into the systems that we develop, their activity can be monitored in real time. Measurement based automatic detection mechanisms can be designed into systems. This will permit the detection of system misuse and detect incipient reliability problems. By demonstrating how to develop simple experiments for the empirical validation of theoretical research and showing how to convert measurement data into meaningful and valuable information, this text fosters more precise use of software measurement in the computer science and software engineering literature. Software Engineering Measurement shows you how to convert your measurement data to valuable information that can be used immediately for software process improvement.

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