

The Senior Software Engineer 11 Practices Of An Effective Technical Leader

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The Missing README - Chris Riccomini
2021-08-10

Key concepts and best practices for new software engineers — stuff critical to your workplace success that you weren't taught in school. For new software engineers, knowing how to program is only half the battle. You'll quickly find that many of the skills and processes key to your success are not taught in any school or bootcamp. The Missing README fills in that gap—a distillation of workplace lessons, best practices, and engineering fundamentals that the authors have taught rookie developers at top companies for more than a decade. Early chapters explain what to expect when you begin your career at a company. The book's middle section expands your technical education, teaching you how to work with existing codebases, address and prevent technical debt, write production-grade software, manage dependencies, test effectively, do code reviews, safely deploy software, design evolvable architectures, and handle incidents when you're on-call. Additional chapters cover planning and interpersonal skills such as Agile planning, working effectively with your manager, and growing to senior levels and beyond. You'll learn:

- How to use the legacy code change algorithm, and leave code cleaner than you found it
- How to write operable code with logging, metrics, configuration, and defensive programming
- How to write deterministic tests, submit code reviews, and give feedback on other people's code
- The technical design process,

including experiments, problem definition, documentation, and collaboration • What to do when you are on-call, and how to navigate production incidents • Architectural techniques that make code change easier • Agile development practices like sprint planning, stand-ups, and retrospectives This is the book your tech lead wishes every new engineer would read before they start. By the end, you'll know what it takes to transition into the workplace—from CS classes or bootcamps to professional software engineering.

Beginning Software Engineering - Rod Stephens
2022-10-14

Discover the foundations of software engineering with this easy and intuitive guide In the newly updated second edition of Beginning Software Engineering, expert programmer and tech educator Rod Stephens delivers an instructive and intuitive introduction to the fundamentals of software engineering. In the book, you'll learn to create well-constructed software applications that meet the needs of users while developing the practical, hands-on skills needed to build robust, efficient, and reliable software. The author skips the unnecessary jargon and sticks to simple and straightforward English to help you understand the concepts and ideas discussed within. He also offers you real-world tested methods you can apply to any programming language. You'll also get: Practical tips for preparing for programming job interviews, which often include questions about software engineering practices

A no-nonsense guide to requirements gathering, system modeling, design, implementation, testing, and debugging Brand-new coverage of user interface design, algorithms, and programming language choices Beginning Software Engineering doesn't assume any experience with programming, development, or management. It's plentiful figures and graphics help to explain the foundational concepts and every chapter offers several case examples, Try It Out, and How It Works explanatory sections. For anyone interested in a new career in software development, or simply curious about the software engineering process, Beginning Software Engineering, Second Edition is the handbook you've been waiting for.

The Senior Software Engineer - David Bryant Copeland 2013-07-01

11 simple practices a software engineer can apply to be more a more effective contributor and more productive team member. Included are personal processes for fixing bugs and implementing new features, tips for writing, interviewing, and time management, as well as guides for bootstrapping new projects, making technical arguments, and leading a team.

Extreme C - Kamran Amini 2019-10-31

Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key Features Make the most of C's low-level control, flexibility, and high performance A comprehensive guide to C's most powerful and challenging features A thought-provoking guide packed with hands-on exercises and examples Book Description There's a lot more to C than knowing the language syntax. The industry looks for developers with a rigorous, scientific understanding of the principles and practices. Extreme C will teach you to use C's advanced low-level power to write effective, efficient systems. This intensive, practical guide will help you become an expert C programmer. Building on your existing C knowledge, you will master preprocessor directives, macros, conditional compilation, pointers, and much more. You will gain new insight into algorithm design, functions, and structures. You will discover how C helps you squeeze maximum performance out of critical, resource-constrained applications. C still plays a critical role in 21st-century programming,

remaining the core language for precision engineering, aviations, space research, and more. This book shows how C works with Unix, how to implement OO principles in C, and fully covers multi-processing. In Extreme C, Amini encourages you to think, question, apply, and experiment for yourself. The book is essential for anybody who wants to take their C to the next level. What you will learn Build advanced C knowledge on strong foundations, rooted in first principles Understand memory structures and compilation pipeline and how they work, and how to make most out of them Apply object-oriented design principles to your procedural C code Write low-level code that's close to the hardware and squeezes maximum performance out of a computer system Master concurrency, multithreading, multi-processing, and integration with other languages Unit Testing and debugging, build systems, and inter-process communication for C programming Who this book is for Extreme C is for C programmers who want to dig deep into the language and its capabilities. It will help you make the most of the low-level control C gives you.

Essential Skills for the Agile Developer - Alan Shalloway 2011-08-18

Agile has become today's dominant software development paradigm, but agile methods remain difficult to measure and improve. Essential Skills for the Agile Developer fills this gap from the bottom up, teaching proven techniques for assessing and optimizing both individual and team agile practices. Written by four principals of Net Objectives—one of the world's leading agile training and consulting firms—this book reflects their unsurpassed experience helping organizations transition to agile. It focuses on the specific actions and insights that can deliver the greatest design and programming improvements with economical investment. The authors reveal key factors associated with successful agile projects and offer practical ways to measure them. Through actual examples, they address principles, attitudes, habits, technical practices, and design considerations—and above all, show how to bring all these together to deliver higher-value software. Using the authors' techniques, managers and teams can optimize the whole organization and the whole product across its

entire lifecycle. Essential Skills for the Agile Developer shows how to Perform programming by intention Separate use from construction Consider testability before writing code Avoid over- and under-design Succeed with Acceptance Test Driven Development (ATDD) Minimize complexity and rework Use encapsulation more effectively and systematically Know when and how to use inheritance Prepare for change more successfully Perform continuous integration more successfully Master powerful best practices for design and refactoring

Practices of an Agile Developer - Venkat Subramaniam 2006-04-04

These are the proven, effective agile practices that will make you a better developer. You'll learn pragmatic ways of approaching the development process and your personal coding techniques. You'll learn about your own attitudes, issues with working on a team, and how to best manage your learning, all in an iterative, incremental, agile style. You'll see how to apply each practice, and what benefits you can expect. Bottom line: This book will make you a better developer.

Software Engineering at Google - Titus Winters 2020-02-28

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright, along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world's leading practitioners construct and maintain software. This book covers Google's unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You'll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make

your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

What Every Engineer Should Know about Software Engineering - Philip A. Laplante 2007-04-25

Do you Use a computer to perform analysis or simulations in your daily work? Write short scripts or record macros to perform repetitive tasks? Need to integrate off-the-shelf software into your systems or require multiple applications to work together? Find yourself spending too much time working the kink

Debugging - David J. AGANS 2002-09-23

When the pressure is on to resolve an elusive software or hardware glitch, what's needed is a cool head courtesy of a set of rules guaranteed to work on any system, in any circumstance. Written in a frank but engaging style, this book provides simple, foolproof principles guaranteed to help find any bug quickly. Recognized tech expert and author David Agans changes the way you think about debugging, making those pesky problems suddenly much easier to find and fix. Agans identifies nine simple, practical rules that are applicable to any software application or hardware system, which can help detect any bug, no matter how tricky or obscure. Illustrating the rules with real-life bug-detection war stories, Debugging shows you how to: Understand the system: how perceiving the ""roadmap"" can hasten your journey Quit thinking and look: when hands-on investigation can't be avoided Isolate critical factors: why changing one element at a time can be an essential tool Keep an audit trail: how keeping a record of the debugging process can win the day Whether the system or program you're working on has been designed wrong, built wrong, or used wrong, Debugging helps you think correctly about bugs, so the problems virtually reveal themselves.

Harnessing Hibernate - James Elliott 2008-04-22

Describes the features and functions of Hibernate, covering such topics as performing object/relational mapping, working with groups, using Hibernate Query Language, connecting Hibernate to MySQL, and installing Maven.

Working Effectively with Legacy Code -

Michael Feathers 2004-09-22

Get more out of your legacy systems: more performance, functionality, reliability, and manageability Is your code easy to change? Can you get nearly instantaneous feedback when you do change it? Do you understand it? If the answer to any of these questions is no, you have legacy code, and it is draining time and money away from your development efforts. In this book, Michael Feathers offers start-to-finish strategies for working more effectively with large, untested legacy code bases. This book draws on material Michael created for his renowned Object Mentor seminars: techniques Michael has used in mentoring to help hundreds of developers, technical managers, and testers bring their legacy systems under control. The topics covered include Understanding the mechanics of software change: adding features, fixing bugs, improving design, optimizing performance Getting legacy code into a test harness Writing tests that protect you against introducing new problems Techniques that can be used with any language or platform—with examples in Java, C++, C, and C# Accurately identifying where code changes need to be made Coping with legacy systems that aren't object-oriented Handling applications that don't seem to have any structure This book also includes a catalog of twenty-four dependency-breaking techniques that help you work with program elements in isolation and make safer changes.

The Effective Engineer - Edmond Lau

2015-03-19

Introducing *The Effective Engineer*--the only book designed specifically for today's software engineers, based on extensive interviews with engineering leaders at top tech companies, and packed with hundreds of techniques to accelerate your career.

[Ask a Manager](#) - Alison Green 2018-05-01

From the creator of the popular website *Ask a Manager* and New York's work-advice columnist comes a witty, practical guide to 200 difficult professional conversations—featuring all-new advice! There's a reason Alison Green has been called “the Dear Abby of the work world.” Ten years as a workplace-advice columnist have taught her that people avoid awkward conversations in the office because they simply

don't know what to say. Thankfully, Green does—and in this incredibly helpful book, she tackles the tough discussions you may need to have during your career. You'll learn what to say when • coworkers push their work on you—then take credit for it • you accidentally trash-talk someone in an email then hit “reply all” • you're being micromanaged—or not being managed at all • you catch a colleague in a lie • your boss seems unhappy with your work • your cubemate's loud speakerphone is making you homicidal • you got drunk at the holiday party
Praise for *Ask a Manager* “A must-read for anyone who works . . . [Alison Green's] advice boils down to the idea that you should be professional (even when others are not) and that communicating in a straightforward manner with candor and kindness will get you far, no matter where you work.”—Booklist (starred review) “The author's friendly, warm, no-nonsense writing is a pleasure to read, and her advice can be widely applied to relationships in all areas of readers' lives. Ideal for anyone new to the job market or new to management, or anyone hoping to improve their work experience.”—Library Journal (starred review) “I am a huge fan of Alison Green's *Ask a Manager* column. This book is even better. It teaches us how to deal with many of the most vexing big and little problems in our workplaces—and to do so with grace, confidence, and a sense of humor.”—Robert Sutton, Stanford professor and author of *The No Asshole Rule* and *The Asshole Survival Guide* “*Ask a Manager* is the ultimate playbook for navigating the traditional workforce in a diplomatic but firm way.”—Erin Lowry, author of *Broke Millennial: Stop Scraping By and Get Your Financial Life Together*

The Software Engineering Manager

Interview Guide - Vidal Graupera 2020-03-29

Interviewing can be challenging, time-consuming, stressful, frustrating, and full of disappointments. My goal is to help make things easier for you so you can get the engineering leadership job you want. *The Software Engineering Manager Interview Guide* is a comprehensive, no-nonsense book about landing an engineering leadership role at a top-tier tech company. You will learn how to master the different kinds of engineering management

interview questions. If you only pick up one or two tips from this book, it could make the difference in getting the dream job you want. This guide contains a collection of 150+ real-life management and behavioral questions I was asked on phone screens and by panels during onsite interviews for engineering management positions at a variety of big-name and top-tier tech companies in the San Francisco Bay Area such as Google, Facebook, Amazon, Twitter, LinkedIn, Uber, Lyft, Airbnb, Pinterest, Salesforce, Intuit, Autodesk, et al. In this book, I discuss my experiences and reflections mainly from the candidate's perspective. Your experience will vary. The random variables include who will be on your panel, what exactly they will ask, the level of training and mood of the interviewers, their preferences, and biases. While you cannot control any of those variables, you can control how prepared you are, and hopefully, this book will help you in that process. I will share with you everything I've learned while keeping this book short enough to read on a plane ride. I will share tips I picked up along the way. If you are interviewing this guide will serve you as a playbook to prepare, or if you are hiring give you ideas as to what you might ask an engineering management candidate yourself.

CONTENTS: Introduction Chapter 1: Answering Behavioral Interview Questions Chapter 2: The Job Interviews Phone Screens Prep Call with the Recruiter Onsite Company Values Coding, Algorithms and Data structures System Design and Architecture Interviews Generic Design Of A Popular System A Design Specific To A Domain Design Of A System Your Team Worked On Lunch Interview Managerial and Leadership Bar Raiser Unique One-Off Interviews Chapter 3: Tips To Succeed How To Get The Interviews Scheduling and Timelines Interview Feedback Mock Interviews Panelists First Impressions Thank You Notes Ageism Chapter 4: Example Behavioral and Competency Questions General Questions Feedback and Performance Management Prioritization and Execution Strategy and Vision Hiring Talent and Building a Team Working With Tech Leads, Team Leads and Technology Dealing With Conflicts Diversity and Inclusion

Taming Information Technology - Eser Kandogan
2012-09-06

Information technology is at the center of modern life. It supports most day-to-day activities: talking on the phone, getting money from an ATM, or working in the office. Whether for work, commerce, or fun, we interact with computers, networks, and databases — all sorts of information technology. How does it work? Certainly, technological advances helped create this world. But what keeps it running? The answer is people. These people — computer system administrators — are the unsung heroes of the modern age. This book, ten years in the making, is the result. It tells the story of system administration through the narratives of real system administrators. It documents dynamic systems of people and machines, of specialists working together to tame hugely complex information technology infrastructures, developing and adapting their own tools and practices over time to create productive work environments. The authors hope Taming Information Technology will lead the way to a future in which the important work of these IT workers is better appreciated, better understood, and better supported.

Software Engineering Design - Carlos Otero
2012-08-23

Taking a learn-by-doing approach, Software Engineering Design: Theory and Practice uses examples, review questions, chapter exercises, and case study assignments to provide students and practitioners with the understanding required to design complex software systems. Explaining the concepts that are immediately relevant to software designers, it begins with a review of software design fundamentals. The text presents a formal top-down design process that consists of several design activities with varied levels of detail, including the macro-, micro-, and construction-design levels. As part of the top-down approach, it provides in-depth coverage of applied architectural, creational, structural, and behavioral design patterns. For each design issue covered, it includes a step-by-step breakdown of the execution of the design solution, along with an evaluation, discussion, and justification for using that particular solution. The book outlines industry-proven software design practices for leading large-scale software design efforts, developing reusable and high-quality software systems, and producing

technical and customer-driven design documentation. It also: Offers one-stop guidance for mastering the Software Design & Construction sections of the official Software Engineering Body of Knowledge (SWEBOK®) Details a collection of standards and guidelines for structuring high-quality code Describes techniques for analyzing and evaluating the quality of software designs Collectively, the text supplies comprehensive coverage of the software design concepts students will need to succeed as professional design leaders. The section on engineering leadership for software designers covers the necessary ethical and leadership skills required of software developers in the public domain. The section on creating software design documents (SDD) familiarizes students with the software design notations, structural descriptions, and behavioral models required for SDDs. Course notes, exercises with answers, online resources, and an instructor's manual are available upon qualified course adoption. Instructors can contact the author about these resources via the author's website: <http://softwareengineeringdesign.com/>

Mixing Secrets for the Small Studio - Mike Senior 2018-08-06

Discover how to achieve release-quality mixes even in the smallest studios by applying power-user techniques from the world's most successful producers. *Mixing Secrets for the Small Studio* is the best-selling primer for small-studio enthusiasts who want chart-ready sonics in a hurry. Drawing on the back-room strategies of more than 160 famous names, this entertaining and down-to-earth guide leads you step-by-step through the entire mixing process. On the way, you'll unravel the mysteries of every type of mix processing, from simple EQ and compression through to advanced spectral dynamics and "fairy dust" effects. User-friendly explanations introduce technical concepts on a strictly need-to-know basis, while chapter summaries and assignments are perfect for school and college use. ■ Learn the subtle editing, arrangement, and monitoring tactics which give industry insiders their competitive edge, and master the psychological tricks which protect you from all the biggest rookie mistakes. ■ Find out where you don't need to spend money, as well as how to make a limited budget

really count. ■ Pick up tricks and tips from leading-edge engineers working on today's multi-platinum hits, including Derek "MixedByAli" Ali, Michael Brauer, Dylan "3D" Dresdow, Tom Elmhirst, Serban Ghenea, Jacquire King, the Lord-Alge brothers, Tony Maserati, Manny Marroquin, Noah "50" Shebib, Mark "Spike" Stent, DJ Swivel, Phil Tan, Andy Wallace, Young Guru, and many, many more... Now extensively expanded and updated, including new sections on mix-buss processing, mastering, and the latest advances in plug-in technology.

How Google Tests Software - James A. Whittaker 2012-03-21

2012 Jolt Award finalist! Pioneering the Future of Software Test Do you need to get it right, too? Then, learn from Google. Legendary testing expert James Whittaker, until recently a Google testing leader, and two top Google experts reveal exactly how Google tests software, offering brand-new best practices you can use even if you're not quite Google's size...yet! Breakthrough Techniques You Can Actually Use Discover 100% practical, amazingly scalable techniques for analyzing risk and planning tests...thinking like real users...implementing exploratory, black box, white box, and acceptance testing...getting usable feedback...tracking issues...choosing and creating tools...testing "Docs & Mocks," interfaces, classes, modules, libraries, binaries, services, and infrastructure...reviewing code and refactoring...using test hooks, presubmit scripts, queues, continuous builds, and more. With these techniques, you can transform testing from a bottleneck into an accelerator—and make your whole organization more productive!

Building Mobile Apps at Scale - Gergely Orosz 2021-04-06

While there is a lot of appreciation for backend and distributed systems challenges, there tends to be less empathy for why mobile development is hard when done at scale. This book collects challenges engineers face when building iOS and Android apps at scale, and common ways to tackle these. By scale, we mean having numbers of users in the millions and being built by large engineering teams. For mobile engineers, this book is a blueprint for modern app engineering approaches. For non-mobile engineers and

managers, it is a resource with which to build empathy and appreciation for the complexity of world-class mobile engineering. The book covers iOS and Android mobile app challenges on these dimensions: Challenges due to the unique nature of mobile applications compared to the web, and to the backend. App complexity challenges. How do you deal with increasingly complicated navigation patterns? What about non-deterministic event combinations? How do you localize across several languages, and how do you scale your automated and manual tests? Challenges due to large engineering teams. The larger the mobile team, the more challenging it becomes to ensure a consistent architecture. If your company builds multiple apps, how do you balance not rewriting everything from scratch while moving at a fast pace, over waiting on "centralized" teams? Cross-platform approaches. The tooling to build mobile apps keeps changing. New languages, frameworks, and approaches that all promise to address the pain points of mobile engineering keep appearing. But which approach should you choose? Flutter, React Native, Cordova? Native apps? Reuse business logic written in Kotlin, C#, C++ or other languages? What engineering approaches do "world-class" mobile engineering teams choose in non-functional aspects like code quality, compliance, privacy, compliance, or with experimentation, performance, or app size?

[Sustainable Web Development with Ruby on Rails](#) - David Copeland 2020-11

A comprehensive guide to building Ruby on Rails apps that can be sustained for many years.

Occupational Outlook Handbook - United States. Bureau of Labor Statistics 1976

Cracking the Coding Interview - Gayle Laakmann McDowell 2011

Now in the 5th edition, Cracking the Coding Interview gives you the interview preparation you need to get the top software developer jobs. This book provides: 150 Programming Interview Questions and Solutions: From binary trees to binary search, this list of 150 questions includes the most common and most useful questions in data structures, algorithms, and knowledge based questions. 5 Algorithm Approaches: Stop being blind-sided by tough algorithm questions, and learn these five approaches to tackle the

trickiest problems. Behind the Scenes of the interview processes at Google, Amazon, Microsoft, Facebook, Yahoo, and Apple: Learn what really goes on during your interview day and how decisions get made. Ten Mistakes Candidates Make -- And How to Avoid Them: Don't lose your dream job by making these common mistakes. Learn what many candidates do wrong, and how to avoid these issues. Steps to Prepare for Behavioral and Technical Questions: Stop meandering through an endless set of questions, while missing some of the most important preparation techniques. Follow these steps to more thoroughly prepare in less time.

The Problem with Software - Adam Barr 2018-10-23

An industry insider explains why there is so much bad software—and why academia doesn't teach programmers what industry wants them to know. Why is software so prone to bugs? So vulnerable to viruses? Why are software products so often delayed, or even canceled? Is software development really hard, or are software developers just not that good at it? In *The Problem with Software*, Adam Barr examines the proliferation of bad software, explains what causes it, and offers some suggestions on how to improve the situation. For one thing, Barr points out, academia doesn't teach programmers what they actually need to know to do their jobs: how to work in a team to create code that works reliably and can be maintained by somebody other than the original authors. As the size and complexity of commercial software have grown, the gap between academic computer science and industry has widened. It's an open secret that there is little engineering in software engineering, which continues to rely not on codified scientific knowledge but on intuition and experience. Barr, who worked as a programmer for more than twenty years, describes how the industry has evolved, from the era of mainframes and Fortran to today's embrace of the cloud. He explains bugs and why software has so many of them, and why today's interconnected computers offer fertile ground for viruses and worms. The difference between good and bad software can be a single line of code, and Barr includes code to illustrate the consequences of seemingly inconsequential

choices by programmers. Looking to the future, Barr writes that the best prospect for improving software engineering is the move to the cloud. When software is a service and not a product, companies will have more incentive to make it good rather than "good enough to ship."

Guide to Advanced Empirical Software Engineering - Forrest Shull 2007-11-21

This book gathers chapters from some of the top international empirical software engineering researchers focusing on the practical knowledge necessary for conducting, reporting and using empirical methods in software engineering.

Topics and features include guidance on how to design, conduct and report empirical studies.

The volume also provides information across a range of techniques, methods and qualitative and quantitative issues to help build a toolkit applicable to the diverse software development contexts

Software Engineering for Resilient Systems - Radu Calinescu 2019-09-10

This book constitutes the refereed proceedings of the 11th International Workshop on Software Engineering for Resilient Systems, SERENE 2019, held in Naples, Italy, in September 2019.

The 5 full papers and 4 short papers presented together with 1 keynote and 1 invited paper were carefully reviewed and selected from 12 submissions. They cover the following areas: resilience engineering in complex and critical applications; testing and validation methods; security, trust and privacy management.

Pragmatic Thinking and Learning - Andy Hunt 2008-10-28

Printed in full color. Software development happens in your head. Not in an editor, IDE, or design tool. You're well educated on how to work with software and hardware, but what about wetware--our own brains? Learning new skills and new technology is critical to your career, and it's all in your head. In this book by Andy Hunt, you'll learn how our brains are wired, and how to take advantage of your brain's architecture. You'll learn new tricks and tips to learn more, faster, and retain more of what you learn. You need a pragmatic approach to thinking and learning. You need to Refactor Your Wetware. Programmers have to learn constantly; not just the stereotypical new technologies, but also the problem domain of the application, the

whims of the user community, the quirks of your teammates, the shifting sands of the industry, and the evolving characteristics of the project itself as it is built. We'll journey together through bits of cognitive and neuroscience, learning and behavioral theory. You'll see some surprising aspects of how our brains work, and how you can take advantage of the system to improve your own learning and thinking skills. In this book you'll learn how to: Use the Dreyfus Model of Skill Acquisition to become more expert Leverage the architecture of the brain to strengthen different thinking modes Avoid common "known bugs" in your mind Learn more deliberately and more effectively Manage knowledge more efficiently

Rethinking Productivity in Software Engineering - Caitlin Sadowski 2019-05-07

Get the most out of this foundational reference and improve the productivity of your software teams. This open access book collects the wisdom of the 2017 "Dagstuhl" seminar on productivity in software engineering, a meeting of community leaders, who came together with the goal of rethinking traditional definitions and measures of productivity. The results of their work, *Rethinking Productivity in Software Engineering*, includes chapters covering definitions and core concepts related to productivity, guidelines for measuring productivity in specific contexts, best practices and pitfalls, and theories and open questions on productivity. You'll benefit from the many short chapters, each offering a focused discussion on one aspect of productivity in software engineering. Readers in many fields and industries will benefit from their collected work. Developers wanting to improve their personal productivity, will learn effective strategies for overcoming common issues that interfere with progress. Organizations thinking about building internal programs for measuring productivity of programmers and teams will learn best practices from industry and researchers in measuring productivity. And researchers can leverage the conceptual frameworks and rich body of literature in the book to effectively pursue new research directions. What You'll Learn Review the definitions and dimensions of software productivity See how time management is having the opposite of the intended effect

Develop valuable dashboards Understand the impact of sensors on productivity Avoid software development waste Work with human-centered methods to measure productivity Look at the intersection of neuroscience and productivity Manage interruptions and context-switching Who Book Is For Industry developers and those responsible for seminar-style courses that include a segment on software developer productivity. Chapters are written for a generalist audience, without excessive use of technical terminology.

The Pragmatic Programmer - David Thomas 2019-07-30

"One of the most significant books in my life."

-Obie Fernandez, Author, The Rails Way

"Twenty years ago, the first edition of The Pragmatic Programmer completely changed the trajectory of my career. This new edition could do the same for yours." -Mike Cohn, Author of Succeeding with Agile, Agile Estimating and Planning, and User Stories Applied ". . . filled with practical advice, both technical and professional, that will serve you and your projects well for years to come." -Andrea Goulet, CEO, Corgibytes, Founder, LegacyCode.Rocks ". . . lightning does strike twice, and this book is proof." -VM (Vicky) Brasseur, Director of Open Source Strategy, Juniper Networks The Pragmatic Programmer is one of those rare tech books you'll read, re-read, and read again over the years. Whether you're new to the field or an experienced practitioner, you'll come away with fresh insights each and every time. Dave Thomas and Andy Hunt wrote the first edition of this influential book in 1999 to help their clients create better software and rediscover the joy of coding. These lessons have helped a generation of programmers examine the very essence of software development, independent of any particular language, framework, or methodology, and the Pragmatic philosophy has spawned hundreds of books, screencasts, and audio books, as well as thousands of careers and success stories. Now, twenty years later, this new edition re-examines what it means to be a modern programmer. Topics range from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to: Fight software

rot Learn continuously Avoid the trap of duplicating knowledge Write flexible, dynamic, and adaptable code Harness the power of basic tools Avoid programming by coincidence Learn real requirements Solve the underlying problems of concurrent code Guard against security vulnerabilities Build teams of Pragmatic Programmers Take responsibility for your work and career Test ruthlessly and effectively, including property-based testing Implement the Pragmatic Starter Kit Delight your users Written as a series of self-contained sections and filled with classic and fresh anecdotes, thoughtful examples, and interesting analogies, The Pragmatic Programmer illustrates the best approaches and major pitfalls of many different aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Become an Effective Software Engineering Manager - James Stanier 2020-06-09

Software startups make global headlines every day. As technology companies succeed and grow, so do their engineering departments. In your career, you'll may suddenly get the opportunity to lead teams: to become a manager. But this is often uncharted territory. How can you decide whether this career move is right for you? And if you do, what do you need to learn to succeed? Where do you start? How do you know that you're doing it right? What does "it" even mean? And isn't management a dirty word? This book will share the secrets you need to know to manage engineers successfully. Going from engineer to manager doesn't have to be intimidating. Engineers can be managers, and fantastic ones at that. Cast aside the rhetoric and focus on practical, hands-on techniques and tools. You'll become an effective and supportive team leader that your staff will look up to. Start with your transition to being a manager and see

how that compares to being an engineer. Learn how to better organize information, feel productive, and delegate, but not micromanage. Discover how to manage your own boss, hire and fire, do performance and salary reviews, and build a great team. You'll also learn the psychology: how to ship while keeping staff happy, coach and mentor, deal with deadline pressure, handle sensitive information, and navigate workplace politics. Consider your whole department. How can you work with other teams to ensure best practice? How do you help form guilds and committees and communicate effectively? How can you create career tracks for individual contributors and managers? How can you support flexible and remote working? How can you improve diversity in the industry through your own actions? This book will show you how. Great managers can make the world a better place. Join us.

Case Study Research in Software

Engineering - Per Runeson 2012-03-07

Based on their own experiences of in-depth case studies of software projects in international corporations, in this book the authors present detailed practical guidelines on the preparation, conduct, design and reporting of case studies of software engineering. This is the first software engineering specific book on the case study research method.

[The Essence of Software Engineering](#) - Ivar Jacobson 2013-01-11

SEMAT (Software Engineering Methods and Theory) is an international initiative designed to identify a common ground, or universal standard, for software engineering. It is supported by some of the most distinguished contributors to the field. Creating a simple language to describe methods and practices, the SEMAT team expresses this common ground as a kernel-or framework-of elements essential to all software development. *The Essence of Software Engineering* introduces this kernel and shows how to apply it when developing software and improving a team's way of working. It is a book for software professionals, not methodologists. Its usefulness to development team members, who need to evaluate and choose the best practices for their work, goes well beyond the description or application of any single method. "Software is both a craft and a

science, both a work of passion and a work of principle. Writing good software requires both wild flights of imagination and creativity, as well as the hard reality of engineering tradeoffs. This book is an attempt at describing that balance."

—Robert Martin (unclebob) "The work of Ivar Jacobson and his colleagues, started as part of the SEMAT initiative, has taken a systematic approach to identifying a 'kernel' of software engineering principles and practices that have stood the test of time and recognition."

—Bertrand Meyer "The software development industry needs and demands a core kernel and language for defining software development practices—practices that can be mixed and matched, brought on board from other organizations; practices that can be measured; practices that can be integrated; and practices that can be compared and contrasted for speed, quality, and price. This thoughtful book gives a good grounding in ways to think about the problem, and a language to address the need, and every software engineer should read it."

—Richard Soley

Help Your Boss Help You - Ken Kousen

2021-07-06

Develop more productive habits in dealing with your manager. As a professional in the business world, you care about doing your job the right way. The quality of your work matters to you, both as a professional and as a person. The company you work for cares about making money and your boss is evaluated on that basis. Sometimes those goals overlap, but the different priorities mean conflict is inevitable. Take concrete steps to build a relationship with your manager that helps both sides succeed. Guide your manager to treat you as a vital member of the team who should be kept as happy and productive as possible. When your manager insists on a course of action you don't like, most employees feel they have only two options: you can swallow your objections, or you can leave. Neither option gets you what you want, which is for your manager to consider your interests when making decisions. Challenging your boss directly is risky, but if you understand what really matters to your manager, you can build a balanced relationship that works for both sides. Provide timely "good enough" answers that satisfy the immediate need of the boss to move

forward. Use a productive solution to the Iterated Prisoner's Dilemma to structure your interactions with management, going along when necessary and pushing back where appropriate, without threatening the loyalty relationship. Send the two most important messages to your boss: "I got this" and "I got your back," to prove your value to the boss and the organization. Analyze your manager's communication preferences so you can express your arguments in a way most likely to be heard and understood. Avoid key traps, like thinking of the boss as your friend or violating the chain of command unnecessarily.

Embracing Modern C++ Safely - John Lakos
2021-12-23

In *Embracing Modern C++ Safely*, John Lakos and Vittorio Romeo analyze each core language feature of "Modern C++" (introduced by C++11 and C++14), illuminating exactly what developers and teams must know to succeed. Lakos and Romeo present extensive real-life code examples; thoroughly describe pitfalls that arise when engineers with diverse experience use these features together, and illuminate issues that repeatedly occur in real-world application development. Drawing on their extensive C++ experience, they focus on major features of C++ 14 and C++ 11 that have been around long enough to be thoroughly evaluated. You will learn which "modern" features are safe under almost all circumstances; which carry a real risk of misuse and suboptimal results if programmers are improperly educated and trained; and which are generally "unsafe," and should be used rarely if at all. If you are ready to safely make the most of Modern C++, the in-depth, hands-on insights from this guide will help you improve your productivity and build far more robust software.

SOLID is Not Solid: Five Object-Oriented Principles To Create a Codebase Everyone Will Hate - David Bryant Copeland 2019-12-18
Object orientation is a lie. Reusable, flexible components have failed. The SOLID Principles of Object-Oriented Design still cling to these lies, sending developers down so many wrong paths. In less than 70 pages, this book presents five broadsides against each principle, tracing their history, demonstrating their flaws, and taking their advice to an hilarious degree all to prove a

point: you can build good software by focusing on the problem at hand, and discussing the code you're writing, not some nebulous set of principles.

A Philosophy of Software Design - John Ousterhout 2018-04-10

Software Engineering at Google - Titus Winters 2020-03

The approach to and understanding of software engineering at Google is unlike any other company. With this book, you'll get a candid and insightful look at how software is constructed and maintained by some of the world's leading practitioners. Titus Winters, Tom Manshreck, and Hyrum K. Wright, software engineers and a technical writer at Google, reframe how software engineering is practiced and taught: from an emphasis on programming to an emphasis on software engineering, which roughly translates to programming over time. You'll learn: Fundamental differences between software engineering and programming How an organization effectively manages a living codebase and efficiently responds to inevitable change Why culture (and recognizing it) is important, and how processes, practices, and tools come into play.

Guide to the Software Engineering Body of Knowledge (Swebok(r)) - IEEE Computer Society 2014

In the *Guide to the Software Engineering Body of Knowledge (SWEBOK(R) Guide)*, the IEEE Computer Society establishes a baseline for the body of knowledge for the field of software engineering, and the work supports the Society's responsibility to promote the advancement of both theory and practice in this field. It should be noted that the Guide does not purport to define the body of knowledge but rather to serve as a compendium and guide to the knowledge that has been developing and evolving over the past four decades. Now in Version 3.0, the Guide's 15 knowledge areas summarize generally accepted topics and list references for detailed information. The editors for Version 3.0 of the SWEBOK(R) Guide are Pierre Bourque (Ecole de technologie superieure (ETS), Universite du Quebec) and Richard E. (Dick) Fairley (Software and Systems Engineering Associates (S2EA)).

The Unwritten Laws of Engineering - W.J. King 1944

Some years ago the author became very much impressed with the fact, which can be observed in any engineering organization, that the chief obstacles to the success of individual engineers or of the group comprising a unit were of a personal and administrative rather than a technical nature. It was apparent that both the author and his associates were getting into much more trouble by violating the unwritten laws of professional conduct than by committing technical sins against the well-documented laws of science. Since the former appeared to be indeed unwritten at that time, as regards any adequate and convenient text, the following "laws" were originally formulated and collected into a sort of scrapbook, to provide a set of "house rules," or a professional code, for a design-engineering section of a large manufacturing organization. Although they are admittedly fragmentary and incomplete, they are offered here for whatever they may be worth to younger men just starting their careers, and to older men who know these things perfectly well but who all too often fail to apply them in practice. Just a few points should be emphasized: None of these "laws" is theoretical or imaginary, and however obvious and trite they may appear, their repeated violation is responsible for much of the frustration and embarrassment to which engineers everywhere are liable. In fact this paper is primarily a record, derived from direct observation over a period of seventeen years, of the experience of four engineering departments, three of them newly organized and struggling to establish themselves by the trial-and-error method. It has, however, been supplemented and confirmed by the experience of others as gathered from numerous discussions, lectures, and the literature, so that it most emphatically does not reflect the unique experience or characteristics of any one organization. Furthermore, many of these rules are generalizations to which exceptions will occur in special circumstances. There is no thought of urging a slavish adherence to rules and red tape, for there is no substitute for judgment, and at times vigorous individual initiative is needed to cut through formalities in an emergency. But in many

respects these laws are like the basic laws of society; they cannot be violated too often with impunity, notwithstanding striking exceptions in individual cases.

The Complete Software Developer's Career Guide - John Z. Sonmez 2017

"Early in his software developer career, John Sonmez discovered that technical knowledge alone isn't enough to break through to the next income level - developers need "soft skills" like the ability to learn new technologies just in time, communicate clearly with management and consulting clients, negotiate a fair hourly rate, and unite teammates and coworkers in working toward a common goal. Today John helps more than 1.4 million programmers every year to increase their income by developing this unique blend of skills. Who Should Read This Book? Entry-Level Developers - This book will show you how to ensure you have the technical skills your future boss is looking for, create a resume that leaps off a hiring manager's desk, and escape the "no work experience" trap. Mid-Career Developers - You'll see how to find and fill in gaps in your technical knowledge, position yourself as the one team member your boss can't live without, and turn those dreaded annual reviews into chance to make an iron-clad case for your salary bump. Senior Developers - This book will show you how to become a specialist who can command above-market wages, how building a name for yourself can make opportunities come to you, and how to decide whether consulting or entrepreneurship are paths you should pursue. Brand New Developers - In this book you'll discover what it's like to be a professional software developer, how to go from "I know some code" to possessing the skills to work on a development team, how to speed along your learning by avoiding common beginner traps, and how to decide whether you should invest in a programming degree or 'bootcamp.'"

Apprenticeship Patterns - Dave Hoover 2009-10-02

Are you doing all you can to further your career as a software developer? With today's rapidly changing and ever-expanding technologies, being successful requires more than technical expertise. To grow professionally, you also need soft skills and effective learning techniques.

Honing those skills is what this book is all about. Authors Dave Hoover and Adewale Oshineye have cataloged dozens of behavior patterns to help you perfect essential aspects of your craft. Compiled from years of research, many interviews, and feedback from O'Reilly's online forum, these patterns address difficult situations that programmers, administrators, and DBAs face every day. And it's not just about financial success. Apprenticeship Patterns also approaches software development as a means to personal fulfillment. Discover how this book can help you make the best of both your life and your career. Solutions to some common obstacles that this book explores in-depth include: Burned out at work? "Nurture Your Passion" by finding a pet

project to rediscover the joy of problem solving. Feeling overwhelmed by new information? Re-explore familiar territory by building something you've built before, then use "Retreat into Competence" to move forward again. Stuck in your learning? Seek a team of experienced and talented developers with whom you can "Be the Worst" for a while. "Brilliant stuff! Reading this book was like being in a time machine that pulled me back to those key learning moments in my career as a professional software developer and, instead of having to learn best practices the hard way, I had a guru sitting on my shoulder guiding me every step towards master craftsmanship. I'll certainly be recommending this book to clients. I wish I had this book 14 years ago!"-Russ Miles, CEO, OpenCredo