Continuous Integration With Jenkins Researchl

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Doing Data Science in R - Mark Andrews 2021-03-31
This approachable introduction to doing data science in R provides step-by-step advice on using the tools and statistical methods to carry out data analysis. Introducing the fundamentals of data science and R before moving into more advanced topics like Multilevel Models and Probabilistic Modelling with Stan, it builds knowledge and skills gradually. This book: Focuses on providing practical guidance for all aspects, helping readers get to grips with the tools, software, and statistical methods needed to provide the right type and level of analysis their data requires Explores the foundations of data science and breaks down the processes involved, focusing on the link between data science and practical social science skills Introduces R at the outset and includes extensive worked examples and R code every step of the way, ensuring students see the value of R and its connection to methods while providing hands-on practice in the software Provides examples and datasets from different disciplines and locations demonstrate the widespread relevance, possible applications, and impact of data science across the social sciences.
The Practice of Reproducible Research - Justin Kitzes 2018
The Practice of Reproducible Research presents concrete examples of how researchers in the data-intensive sciences are working to improve the reproducibility of their research projects. In each of the thirty-one case studies in this volume, the author or team describes the workflow that they used to complete a real-world research project. Authors highlight how they utilized particular tools, ideas, and practices to support reproducibility, emphasizing the very practical how, rather than the why or what, of conducting reproducible research. Part 1 provides an accessible introduction to reproducible research, a basic reproducible research project template, and a synthesis of lessons learned from across the thirty-one case studies. Parts 2 and 3 focus on the case studies themselves. The Practice of Reproducible Research is an invaluable resource for students and researchers who wish to better understand the practice of data-intensive sciences and learn how to make their own research more reproducible.
Intelligent Data Communication Technologies and Internet of Things - D. Jude Hemanth 2019-11-10
This book focuses on the emerging advances in distributed communication systems, big data, intelligent computing and Internet of Things, presenting state-of-the-art research in frameworks, algorithms, methodologies, techniques and applications associated with data engineering and wireless distributed communication technologies. In addition, it discusses potential topics like performance analysis, wireless communication networks, data security and privacy, human computer interaction, 5G Networks, and smart automated

systems, which will provide insights for the evolving data communication technologies. In a nutshell, this proceedings book compiles novel and high-quality research that offers innovative solutions for communications in IoT networks.

Integrating PHP Projects with Jenkins - Sebastian Bergmann 2011-09-23

Most web applications are changed and adapted quite frequently and quickly. Their environment, for example the size and the behavior of the user base, are constantly changing. What was sufficient yesterday can be insufficient today. Especially in a web environment it is important to monitor and continuously improve the internal quality not only when developing, but also when maintaining the software. Jenkins is the leading open-source continuous integration server. Thanks to its thriving plugin ecosystem, it supports building and testing virtually any project. This book explains how you can leverage Jenkins to monitor the various aspects of software quality in a PHP software project.

Performance Benchmarking of Application Monitoring Frameworks - Jan Waller 2014-12-19

Application-level monitoring of continuously operating software systems provides insights into their dynamic behavior, helping to maintain their performance and availability during runtime. Such monitoring may cause a significant runtime overhead to the monitored system, depending on the number and location of used instrumentation probes. In order to improve a system’s instrumentation and to reduce the caused monitoring overhead, it is necessary to know the performance impact of each probe. While many monitoring frameworks are claiming to have minimal impact on the performance, these claims are often not backed up with a detailed performance evaluation determining the actual cost of monitoring. Benchmarks can be used as an effective and affordable way for these evaluations. However, no benchmark specifically targeting the overhead of monitoring itself exists. Furthermore, no established benchmark engineering methodology exists that provides guidelines for the design, execution, and analysis of benchmarks. This thesis introduces a benchmark approach to measure the performance overhead of application-level monitoring frameworks. The core contributions of this approach are 1) a definition of common causes of monitoring overhead, 2) a general benchmark engineering methodology, 3) the MooBench micro-benchmark to measure and quantify causes of monitoring overhead, and 4) detailed performance evaluations of three different application-level monitoring frameworks. Extensive experiments demonstrate the feasibility and practicality of the approach and validate the benchmark results. The developed benchmark is available as open source software and the results of all experiments are available for download to facilitate further validation and replication of the results.

DevOps for the Modern Enterprise - Mirco Hering 2018-04-03

Many organizations are facing the uphill battle of modernizing their legacy IT infrastructure. Most have evolved over the years by taking lessons from traditional or legacy manufacturing: creating a production process that puts the emphasis on the process instead of the people performing the tasks, allowing the organization to treat people like resources to try to achieve high-quality outcomes. But those practices and ideas are failing modern IT, where collaboration and creativeness are required to achieve high-performing, high-quality success. Mirco Hering, a thought leader in managing IT within legacy organizations, lays out a roadmap to success for IT managers, showing them how to create the right ecosystem, how to empower people to bring their best to work every day, and how to put the right technology in the driver's seat to propel their organization to success. But just having the right methods and tools will not magically transform an organization; the cultural change that is the hardest is also the most impactful. Using principles from Agile, Lean, and DevOps as well as first-hand examples from the enterprise world, Hering addresses the different challenges that legacy organizations face as they transform into modern IT departments.

Jenkins: The Definitive Guide - John Ferguson Smart 2011-07-12

Streamline software development with Jenkins, the popular Java-based open source tool that has revolutionized the way teams think about Continuous Integration (CI). This complete guide

shows you how to automate your build, integration, release, and deployment processes with Jenkins—and demonstrates how CI can save you time, money, and many headaches. Ideal for developers, software architects, and project managers, Jenkins: The Definitive Guide is both a CI tutorial and a comprehensive Jenkins reference. Through its wealth of best practices and real-world tips, you'll discover how easy it is to set up a CI service with Jenkins. Learn how to install, configure, and secure your Jenkins server Organize and monitor general-purpose build jobs Integrate automated tests to verify builds, and set up code quality reporting Establish effective team notification strategies and techniques Configure build pipelines, parameterized jobs, matrix builds, and other advanced jobs Manage a farm of Jenkins servers to run distributed builds Implement automated deployment and continuous delivery

Empirical Research for Software Security - Lotfi ben Othmane 2017-11-28

Developing secure software requires the integration of numerous methods and tools into the development process, and software design is based on shared expert knowledge, claims, and opinions. Empirical methods, including data analytics, allow extracting knowledge and insights from the data that organizations collect from their processes and tools, and from the opinions of the experts who practice these processes and methods. This book introduces the reader to the fundamentals of empirical research methods, and demonstrates how these methods can be used to hone a secure software development lifecycle based on empirical data and published best practices.

Implementing Reproducible Research - Victoria Stodden 2018-12-14

In computational science, reproducibility requires that researchers make code and data available to others so that the data can be analyzed in a similar manner as in the original publication. Code must be available to be distributed, data must be accessible in a readable format, and a platform must be available for widely distributing the data and code. In addition, both data and code need to be licensed permissively enough so that others can reproduce the work without a substantial legal burden. Implementing Reproducible Research covers many of the elements necessary for conducting and distributing reproducible research. It explains how to accurately reproduce a scientific result. Divided into three parts, the book discusses the tools, practices, and dissemination platforms for ensuring reproducibility in computational science. It describes: Computational tools, such as Sweave, knitr, VisTrails, Sumatra, CDE, and the Declaratron system Open source practices, good programming practices, trends in open science, and the role of cloud computing in reproducible research Software and methodological platforms, including open source software packages, RunMyCode platform, and open access journals Each part presents contributions from leaders who have developed software and other products that have advanced the field. Supplementary material is available at www.ImplementingRR.org.

Improving hosted continuous integration services - Weyand, Christopher 2017-02-17

Developing large software projects is a complicated task and can be demanding for developers. Continuous integration is common practice for reducing complexity. By integrating and testing changes often, changesets are kept small and therefore easily comprehensible. Travis CI is a service that offers continuous integration and continuous deployment in the cloud. Software projects are build, tested, and deployed using the Travis CI infrastructure without interrupting the development process. This report describes how Travis CI works, presents how time-driven, periodic building is implemented as well as how CI data visualization can be done, and proposes a way of dealing with dependency problems.

Microservices From Day One - Cloves Carneiro Jr. 2016-12-10

Learn what a microservices architecture is, its advantages, and why you should consider using one when starting a new application. The book describes how taking a microservices approach from the start helps avoid the complexity and expense of moving to a service-oriented approach after applications reach a critical code base size or traffic load. Microservices from Day One discusses many of the decisions you face when adopting a service-oriented approach and defines a set of rules to follow for easily

adopting microservices. The book provides simple guidelines and tips for dividing a problem domain into services. It also describes best practices for documenting and generating APIs and client libraries, testing applications with service dependencies, optimizing services for client performance, and much more. Throughout the book, you will follow the development of a sample project to see how to apply the best practices described. What You Will Learn: Apply guidelines and best practices for developing projects that use microservices Define a practical microservices architecture at the beginning of a project that allows for fast development Define and build APIs based on real-world best practices Build services that easily scale by using tools available in most programming languages Test applications in a distributed environment Who This Book is For: Software engineers and web developers who have heard about microservices, and want to either move the project/applications they work on to a service-oriented environment, or want to start a new project knowing that building services helps with ease of scaling and maintainability. The book is a reference for developers who have a desire to build software in smaller, more focused and manageable chunks, but do not know how to get started.

Software Engineering Research, Management and Applications - Roger Lee 2019-07-24

This edited book presents the scientific outcomes of the 17th International Conference on Software Engineering, Artificial Intelligence Research, Management and Applications (SERA 2019) held on May 29–31, 2019 in Honolulu, Hawaii. The aim of the conference was to bring together researchers and scientists, businessmen and entrepreneurs, teachers, engineers, computer users and students to discuss the numerous fields of computer science and to share their experiences and exchange new ideas and information in a meaningful way. This book includes 13 of the conference's most promising papers featuring recent research in software engineering, management and applications

Advances in Natural Computation, Fuzzy Systems and Knowledge Discovery - Ning Xiong 2023-03-02

This book consists of papers on the recent progresses in the state of the art in natural computation, fuzzy systems, and knowledge discovery. The book is useful for researchers, including professors, graduate students, as well as R & D staff in the industry, with a general interest in natural computation, fuzzy systems, and knowledge discovery. The work printed in this book was presented at the 2022 18th International Conference on Natural Computation, Fuzzy Systems, and Knowledge Discovery (ICNC-FSKD 2022), held from 30 July to 1 August 2022, in Fuzhou, China. All papers were rigorously peer-reviewed by experts in the areas.

Tools and Techniques for Software Development in Large Organizations: Emerging Research and Opportunities - Pendyala, Vishnu 2019-12-20

The development of software has expanded substantially in recent years. As these technologies continue to advance, well-known organizations have begun implementing these programs into the ways they conduct business. These large companies play a vital role in the economic environment, so understanding the software that they utilize is pertinent in many aspects. Researching and analyzing the tools that these corporations use will assist in the practice of software engineering and give other organizations an outline of how to successfully implement their own computational methods. Tools and Techniques for Software Development in Large Organizations: Emerging Research and Opportunities is an essential reference source that discusses advanced software methods that prominent companies have adopted to develop high quality products. This book will examine the various devices that organizations such as Google, Cisco, and Facebook have implemented into their production and development processes. Featuring research on topics such as database management, quality assurance, and machine learning, this book is ideally designed for software engineers, data scientists, developers, programmers, professors, researchers, and students seeking coverage on the advancement of software devices in today's major corporations.

Modeling Mobility with Open Data - Michael Behrisch 2015-03-11

This contributed volume contains the conference

proceedings of the Simulation of Urban Mobility (SUMO) conference 2014, Berlin. The included research papers cover a wide range of topics in traffic planning and simulation, including open data, vehicular communication, e-mobility, urban mobility, multimodal traffic as well as usage approaches. The target audience primarily comprises researchers and experts in the field, but the book may also be beneficial for graduate students.

Handbook of Research on Applying Emerging Technologies Across Multiple Disciplines - Marchisio, Emiliano 2022-04-08

In recent decades, there has been a groundbreaking evolution in technology. Every year, technology not only advances, but it also spreads throughout industries. Many fields such as law, education, business, engineering, and more have adopted these advanced technologies into their toolset. These technologies have a vastly different effect ranging from these different industries. The Handbook of Research on Applying Emerging Technologies Across Multiple Disciplines examines how technologies impact many different areas of knowledge. This book combines a solid theoretical approach with many practical applications of new technologies within many disciplines. Covering topics such as computer-supported collaborative learning, machine learning algorithms, and blockchain, this text is essential for technologists, IT specialists, programmers, computer scientists, engineers, managers, administrators, academicians, students, policymakers, and researchers.

Systems, Software and Services Process Improvement - Fergal McCaffery 2013-06-12

This volume constitutes the refereed proceedings of the 20th EuroSPI conference, held in Dundalk, Ireland, in June 2013. The 31 revised papers presented in this volume were carefully reviewed and selected. They are organized in topical sections on SPI Safety and Regulation Issues; SPI Lifecycle and Models; SPI Quality and Testing Issues; SPI Networks and Teams; SPI and Reference Models; SPI Implementation; Agile organisations and an agile management process group; Managing Diversity and Innovation; SPI and Measurement; Risk Management and Functional Safety Standards.

Research Anthology on Cross-Disciplinary Designs and Applications of Automation - Management Association, Information Resources 2021-10-29

Throughout human history, technological advancements have been made for the ease of human labor. With our most recent advancements, it has been the work of scholars to discover ways for machines to take over a large part of this labor and reduce human intervention. These advancements may become essential processes to nearly every industry. It is essential to be knowledgeable about automation so that it may be applied. Research Anthology on Cross-Disciplinary Designs and Applications of Automation is a comprehensive resource on the emerging designs and application of automation. This collection features a number of authors spanning multiple disciplines such as home automation, healthcare automation, government automation, and more. Covering topics such as human-machine interaction, trust calibration, and sensors, this research anthology is an excellent resource for technologists, IT specialists, computer engineers, systems and software engineers, manufacturers, engineers, government officials, professors, students, healthcare administration, managers, CEOs, researchers, and academicians.

Service-Oriented Computing – ICSOC 2015 Workshops - Alex Norta 2016-04-25

This book constitutes the revised selected papers of the 13th International Conference on Service-Oriented Computing, ICSOC 2015, held in Goa, India in November 2015. The conference hosted the following seven workshops: 11th International Workshop on Engineering Service-Oriented Applications, WESOA 2015; Second Workshop on Resource Management in Service-Oriented Computing, RMSOC 2015; Workshop on Intelligent Service Clouds, ISC 2015; Second Workshop on Intelligent Service Clouds; First International Workshop on Dependability Issues in Services Computing, DISCO 2015; Workshop on Engineering for Service-oriented Enterprises, WESE 2015; First International Workshop on Big Data Services and Computational Intelligence, BSCI 2015 (joined with ISC 2015); and Second International Workshop on Formal Modeling and Verification of Service-based systems, FOR-MOVES 2015. The 22 full papers included in this volume were carefully reviewed and selected

from 45 submissions.

Information Systems and Technologies - Álvaro Rocha 2022

This book covers the following main topics: A) information and knowledge management; B) organizational models and information systems; C) software and systems modeling; D) software systems, architectures, applications and tools; E) multimedia systems and applications; F) computer networks, mobility and pervasive systems; G) intelligent and decision support systems; H) big data analytics and applications; I) human-computer interaction; J) ethics, computers and security; K) health informatics; L) information technologies in education; M) information technologies in radio communications; N) technologies for biomedical applications. This book is composed by a selection of articles from The 2022 World Conference on Information Systems and Technologies (WorldCIST'22), held between April 12 and 14, in Budva, Montenegro. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences, and challenges of modern information systems and technologies research, together with their technological development and applications.

Mastering Jenkins - Jonathan McAllister 2015-10-27

Configure and extend Jenkins to architect, build, and automate efficient software delivery pipelines About This Book Configure and horizontally scale a Jenkins installation to support a development organization of any size Implement Continuous Integration, Continuous Delivery, and Continuous Deployment solutions in Jenkins A step-by-step guide to help you get the most out of the powerful automation orchestration platform that is Jenkins Who This Book Is For If you are a novice or intermediate-level Jenkins user who has used Jenkins before but are not familiar with architecting solutions and implementing it in your organization, then this is the book for you. A basic understanding of the core elements of Jenkins is required to make the best use of this book. What You Will Learn Create and manage various types of build jobs, and implement automation tasks to support a software project of any kind Get to grips with the automated testing architecture, and scalable automated testing techniques Facilitate the delivery of software across the SDLC by creating scalable automated deployment solutions Manage scalable automation pipelines in Jenkins using the latest build, test, and deployment strategies Implement a scalable master / slave build automation platform, which can support Windows, Mac OSX, and Linux software solutions Cover troubleshooting and advanced configuration techniques for Jenkins slave nodes Support a robust build and delivery system by implementing basic infrastructure as code solutions in configuration management tools such as Ansible In Detail With the software industry becoming more and more competitive, organizations are now integrating delivery automation and automated quality assurance practices into their business model. Jenkins represents a complete automation orchestration system, and can help converge once segregated groups into a cohesive product development and delivery team. By mastering the Jenkins platform and learning to architect and implement Continuous Integration, Continuous Delivery, and Continuous Deployment solutions, your organization can learn to outmanoeuvre and outpace the competition. This book will equip you with the best practices to implement advanced continuous delivery and deployment systems in Jenkins. The book begins with giving you high-level architectural fundamentals surrounding Jenkins and Continuous Integration. You will cover the different installation scenarios for Jenkins, and see how to install it as a service, as well as the advanced XML configurations. Then, you will proceed to learn more about the architecture and implementation of the Jenkins Master/Save node system, followed by creating and managing Jenkins build jobs effectively. Furthermore, you'll explore Jenkins as an automation orchestration system, followed by implementing advanced automated testing techniques. The final chapters describe in depth the common integrations to Jenkins from third-party tools such as Jira, Artifactory, Amazon EC2, and getting the most out of the Jenkins REST-based API. By the end of this book, you will have all the knowledge necessary to be the definitive resource for managing and implementing advanced Jenkins automation

solutions for your organization. Style and approach This book is a step-by-step guide to architecting and implementing automated build solutions, automated testing practices, and automated delivery methodologies. The topics covered are based on industry-proven techniques, and are explained in a simple and easy to understand manner.

THEORETICAL AND PRACTICAL FOUNDATIONS OF SOCIAL PROCESS MANAGEMENT - 2020-06-29

XXIII International Scientific and Practical Conference

Advances in Computers - 2014-08-27

Since its first volume in 1960, Advances in Computers has presented detailed coverage of innovations in computer hardware, software, theory, design, and applications. It has also provided contributors with a medium in which they can explore their subjects in greater depth and breadth than journal articles usually allow. As a result, many articles have become standard references that continue to be of significant, lasting value in this rapidly expanding field. In-depth surveys and tutorials on new computer technology Well-known authors and researchers in the field Extensive bibliographies with most chapters Many of the volumes are devoted to single themes or subfields of computer science

Smart Education and e-Learning 2021 - Vladimir L. Uskov 2021-06-05

This book contains the contributions presented at the 8th International KES Conference on Smart Education and e-Learning (KES SEEL 2021), which being held as a virtual conference on June 14–16, 2021. It contains high-quality peer-reviewed papers that are grouped into several interconnected parts: smart education; smart e-learning; smart education: systems and technology; smart education: case studies and research; digital education and economics in smart university, smart university development: organizational, managerial and social Issues; smart universities and their Impact on students with disabilities. This book serves as a useful source of research data and valuable information on current research projects, best practices, and case studies for faculty, scholars, Ph.D. students, administrators, and practitioners— all those who are interested in smart education and smart e-learning.

Pipeline as Code - Mohamed Labouardy 2021-11-23

Start thinking about your development pipeline as a mission-critical application. Discover techniques for implementing code-driven infrastructure and CI/CD workflows using Jenkins, Docker, Terraform, and cloud-native services. In Pipeline as Code, you will master: Building and deploying a Jenkins cluster from scratch Writing pipeline as code for cloud-native applications Automating the deployment of Dockerized and Serverless applications Containerizing applications with Docker and Kubernetes Deploying Jenkins on AWS, GCP and Azure Managing, securing and monitoring a Jenkins cluster in production Key principles for a successful DevOps culture Pipeline as Code is a practical guide to automating your development pipeline in a cloud-native, service-driven world. You'll use the latest infrastructure-as-code tools like Packer and Terraform to develop reliable CI/CD pipelines for numerous cloud-native applications. Follow this book's insightful best practices, and you'll soon be delivering software that's quicker to market, faster to deploy, and with less last-minute production bugs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Treat your CI/CD pipeline like the real application it is. With the Pipeline as Code approach, you create a collection of scripts that replace the tedious web UI wrapped around most CI/CD systems. Code-driven pipelines are easy to use, modify, and maintain, and your entire CI pipeline becomes more efficient because you directly interact with core components like Jenkins, Terraform, and Docker. About the book In Pipeline as Code you'll learn to build reliable CI/CD pipelines for cloud-native applications. With Jenkins as the backbone, you'll programmatically control all the pieces of your pipeline via modern APIs. Hands-on examples include building CI/CD workflows for distributed Kubernetes applications, and serverless functions. By the time you're finished, you'll be able to swap manual UI-based adjustments with a fully automated approach! What's inside Build and deploy a Jenkins cluster on scale Write pipeline as code for cloud-native applications Automate the deployment of Dockerized and serverless applications Deploy

Jenkins on AWS, GCP, and Azure Grasp key principles of a successful DevOps culture About the reader For developers familiar with Jenkins and Docker. Examples in Go. About the author Mohamed Labouardy is the CTO and co-founder of Crew.work, a Jenkins contributor, and a DevSecOps evangelist. Table of Contents PART 1 GETTING STARTED WITH JENKINS 1 What's CI/CD? 2 Pipeline as code with Jenkins PART 2 OPERATING A SELF-HEALING JENKINS CLUSTER 3 Defining Jenkins architecture 4 Baking machine images with Packer 5 Discovering Jenkins as code with Terraform 6 Deploying HA Jenkins on multiple cloud providers PART 3 HANDS-ON CI/CD PIPELINES 7 Defining a pipeline as code for microservices 8 Running automated tests with Jenkins 9 Building Docker images within a CI pipeline 10 Cloud-native applications on Docker Swarm 11 Dockerized microservices on K8s 12 Lambda-based serverless functions PART 4 MANAGING, SCALING, AND MONITORING JENKINS 13 Collecting continuous delivery metrics 14 Jenkins administration and best practices

Managing Digital - Charles Betz

About This Book This book, "Managing Digital: Concepts and Practices", is intended to guide a practitioner through the journey of building a digital-first viewpoint and the skills needed to thrive in the digital-first world. As such, this book is a bit of an experiment for The Open Group; it isn't structured as a traditional standard or guide. Instead, it is structured to show the key issues and skills needed at each stage of the digital journey, starting with the basics of a small digital project, eventually building to the concerns of a large enterprise. So, feel free to digest this book in stages — the section Introduction for the student is a good guide. The book is intended for both academic and industry training purposes. This book seeks to provide guidance for both new entrants into the digital workforce and experienced practitioners seeking to update their understanding on how all the various themes and components of IT management fit together in the new world. About The Open Group Press The Open Group Press is an imprint of The Open Group for advancing knowledge of information technology by publishing works from individual authors within The Open Group membership that are relevant to advancing The Open Group mission of Boundaryless Information Flow™. The key focus of The Open Group Press is to publish high-quality monographs, as well as introductory technology books intended for the general public, and act as a complement to The Open Group Standards, Guides, and White Papers. The views and opinions expressed in this book are those of the author, and do not necessarily reflect the consensus position of The Open Group members or staff.

Lean Software Development in Action - Andrea Janes 2014-11-14

This book illustrates how goal-oriented, automated measurement can be used to create Lean organizations and to facilitate the development of Lean software, while also demonstrating the practical implementation of Lean software development by combining tried and trusted tools. In order to be successful, a Lean orientation of software development has to go hand in hand with a company's overall business strategy. To achieve this, two interrelated aspects require special attention: measurement and experience management. In this book, Janes and Succi provide the necessary knowledge to establish "Lean software company thinking," while also exploiting the latest approaches to software measurement. A comprehensive, company-wide measurement approach is exactly what companies need in order to align their activities to the demands of their stakeholders, to their business strategy, etc. With the automatic, non-invasive measurement approach proposed in this book, even small and medium-sized enterprises that do not have the resources to introduce heavyweight processes will be able to make their software development processes considerably more Lean. The book is divided into three parts. Part I, "Motivation for Lean Software Development," explains just what "Lean Production" means, why it can be advantageous to apply Lean concepts to software engineering, and which existing approaches are best suited to achieving this. Part II, "The Pillars of Lean Software Development," presents the tools needed to achieve Lean software development: Non-invasive Measurement, the Goal Question Metric approach, and the Experience Factory. Finally, Part III, "Lean Software Development in Action,"

shows how different tools can be combined to enable Lean Thinking in software development. The book primarily addresses the needs of all those working in the field of software engineering who want to understand how to establish an efficient and effective software development process. This group includes developers, managers, and students pursuing an M.Sc. degree in software engineering.

New Perspectives in Software Engineering - Jezreel Mejia 2020-11-06

This book contains a selection of papers from the 2020 International Conference on Software Process Improvement (CIMPS 20), held between the 21st and 23rd of October in Mazatlán, Sinaloa, México. The CIMPS 20 is a global forum for researchers and practitioners that present and discuss the most recent innovations, trends, results, experiences and concerns in the several perspectives of Software Engineering with clear relationship but not limited to software processes, Security in Information and Communication Technology and Big Data Field. The main topics covered are: Organizational Models, Standards and Methodologies, Software Process Improvement, Knowledge Management, Software Systems, Applications and Tools, Information and Communication Technologies and Processes in Non-software Domains (mining, automotive, aerospace, business, health care, manufacturing, etc.) with a demonstrated relationship to Software Engineering Challenges.

Continuous Software Engineering - Jan Bosch 2014-11-11

This book provides essential insights on the adoption of modern software engineering practices at large companies producing software-intensive systems, where hundreds or even thousands of engineers collaborate to deliver on new systems and new versions of already deployed ones. It is based on the findings collected and lessons learned at the Software Center (SC), a unique collaboration between research and industry, with Chalmers University of Technology, Gothenburg University and Malmö University as academic partners and Ericsson, AB Volvo, Volvo Car Corporation, Saab Electronic Defense Systems, Grundfos, Axis Communications, Jeppesen (Boeing) and Sony Mobile as industrial partners. The 17 chapters present the “Stairway to Heaven” model, which represents the typical evolution path companies move through as they develop and mature their software engineering capabilities. The chapters describe theoretical frameworks, conceptual models and, most importantly, the industrial experiences gained by the partner companies in applying novel software engineering techniques. The book’s structure consists of six parts. Part I describes the model in detail and presents an overview of lessons learned in the collaboration between industry and academia. Part II deals with the first step of the Stairway to Heaven, in which R&D adopts agile work practices. Part III of the book combines the next two phases, i.e., continuous integration (CI) and continuous delivery (CD), as they are closely intertwined. Part IV is concerned with the highest level, referred to as “R&D as an innovation system,” while Part V addresses a topic that is separate from the Stairway to Heaven and yet critically important in large organizations: organizational performance metrics that capture data, and visualizations of the status of software assets, defects and teams. Lastly, Part VI presents the perspectives of two of the SC partner companies. The book is intended for practitioners and professionals in the software-intensive systems industry, providing concrete models, frameworks and case studies that show the specific challenges that the partner companies encountered, their approaches to overcoming them, and the results. Researchers will gain valuable insights on the problems faced by large software companies, and on how to effectively tackle them in the context of successful cooperation projects.

Handbook of Research on Embedded Systems Design - Bagnato, Alessandra 2014-06-30

As real-time and integrated systems become increasingly sophisticated, issues related to development life cycles, non-recurring engineering costs, and poor synergy between development teams will arise. The Handbook of Research on Embedded Systems Design provides insights from the computer science community on integrated systems research projects taking place in the European region. This premier references work takes a look at the diverse range of design principles covered by these

projects, from specification at high abstraction levels using standards such as UML and related profiles to intermediate design phases. This work will be invaluable to designers of embedded software, academicians, students, practitioners, professionals, and researchers working in the computer science industry.

Accelerate - Nicole Forsgren PhD 2018-03-27

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.

I INTERNATIONAL SCIENCE CONFERENCE ON MULTIDISCIPLINARY RESEARCH - 2021-01-19

Abstracts of I International Scientific and Practical Conference

Data Science and Intelligent Applications - Ketan Kotecha 2020-06-17

This book includes selected papers from the International Conference on Data Science and Intelligent Applications (ICDSIA 2020), hosted by Gandhinagar Institute of Technology (GIT), Gujarat, India, on January 24–25, 2020. The proceedings present original and high-quality contributions on theory and practice concerning emerging technologies in the areas of data science and intelligent applications. The conference provides a forum for researchers from academia and industry to present and share their ideas, views and results, while also helping them approach the challenges of technological advancements from different viewpoints. The contributions cover a broad range of topics, including: collective intelligence, intelligent systems, IoT, fuzzy systems, Bayesian networks, ant colony optimization, data privacy and security, data mining, data warehousing, big data analytics, cloud computing, natural language processing, swarm intelligence, speech processing, machine learning and deep learning, and intelligent applications and systems. Helping strengthen the links between academia and industry, the book offers a valuable resource for instructors, students, industry practitioners, engineers, managers, researchers, and scientists alike.

Handbook of Research on IT Applications for Strategic Competitive Advantage and Decision Making - Idemudia, Efosa Carroll 2020-06-05

To date, a plethora of companies and organizations are investing vast amounts of money on the latest technologies. Information technology can be used to improve market share, profits, sales, competitive advantage, and customer/employee satisfaction. Unfortunately, the individuals meant to use these technologies are not well equipped on how to effectively and efficiently use these tools for competitive advantage and decision making. The Handbook of Research on IT Applications for Strategic Competitive Advantage and Decision Making is a collection of innovative research relevant to the methodologies, theoretical frameworks, and latest empirical research findings in information technology applications, strategic competitive advantage, and decision making. While highlighting topics including agility, knowledge management, and business intelligence, this book is ideally designed for information technology professionals, academics, researchers, managers, executives, and government officials interested in using information technology for strategic competitive advantage and better decision making.

Action Research in Software Engineering - Miroslaw Staron 2019-11-24

This book addresses action research (AR), one of the main research methodologies used for academia-industry research collaborations. It elaborates on how to find the right research activities and how to distinguish them from non-significant ones. Further, it details how to glean lessons from the research results, no matter

whether they are positive or negative. Lastly, it shows how companies can evolve and build talents while expanding their product portfolio. The book's structure is based on that of AR projects; it sequentially covers and discusses each phase of the project. Each chapter shares new insights into AR and provides the reader with a better understanding of how to apply it. In addition, each chapter includes a number of practical use cases or examples. Taken together, the chapters cover the entire software lifecycle: from problem diagnosis to project (or action) planning and execution, to documenting and disseminating results, including validity assessments for AR studies. The goal of this book is to help everyone interested in industry-academia collaborations to conduct joint research. It is for students of software engineering who need to learn about how to set up an evaluation, how to run a project, and how to document the results. It is for all academics who aren't afraid to step out of their comfort zone and enter industry. It is for industrial researchers who know that they want to do more than just develop software blindly. And finally, it is for stakeholders who want to learn how to manage industrial research projects and how to set up guidelines for their own role and expectations.

High Performance Computing - Juan Luis Crespo-Mariño 2020-02-12

This book constitutes the refereed proceedings of the 6th Latin American High Performance Computing Conference, CARLA 2019, held in Turrialba, Costa Rica, in September 2019. The 32 revised full papers presented were carefully reviewed and selected out of 62 submissions. The papers included in this book are organized according to the conference tracks - regular track on high performance computing: applications; algorithms and models; architectures and infrastructures; and special track on bioinspired processing (BIP): neural and evolutionary approaches; image and signal processing; biodiversity informatics and computational biology.

Advances in Production Management Systems. Artificial Intelligence for Sustainable and Resilient Production Systems - Alexandre Dolgui 2021-08-31

The five-volume set IFIP AICT 630, 631, 632, 633, and 634 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2021, held in Nantes, France, in September 2021.* The 378 papers presented were carefully reviewed and selected from 529 submissions. They discuss artificial intelligence techniques, decision aid and new and renewed paradigms for sustainable and resilient production systems at four-wall factory and value chain levels. The papers are organized in the following topical sections: Part I: artificial intelligence based optimization techniques for demand-driven manufacturing; hybrid approaches for production planning and scheduling; intelligent systems for manufacturing planning and control in the industry 4.0; learning and robust decision support systems for agile manufacturing environments; low-code and model-driven engineering for production system; meta-heuristics and optimization techniques for energy-oriented manufacturing systems; metaheuristics for production systems; modern analytics and new AI-based smart techniques for replenishment and production planning under uncertainty; system identification for manufacturing control applications; and the future of lean thinking and practice Part II: digital transformation of SME manufacturers: the crucial role of standard; digital transformations towards supply chain resiliency; engineering of smart-product-service-systems of the future; lean and Six Sigma in services healthcare; new trends and challenges in reconfigurable, flexible or agile production system; production management in food supply chains; and sustainability in production planning and lot-sizing Part III: autonomous robots in delivery logistics; digital transformation approaches in production management; finance-driven supply chain; gastronomic service system design; modern scheduling and applications in industry 4.0; recent advances in sustainable manufacturing; regular session: green production and circularity concepts; regular session: improvement models and methods for green and innovative systems; regular session: supply chain and routing management; regular session: robotics and human aspects; regular session: classification and data management

methods; smart supply chain and production in society 5.0 era; and supply chain risk management under coronavirus Part IV: AI for resilience in global supply chain networks in the context of pandemic disruptions; blockchain in the operations and supply chain management; data-based services as key enablers for smart products, manufacturing and assembly; data-driven methods for supply chain optimization; digital twins based on systems engineering and semantic modeling; digital twins in companies first developments and future challenges; human-centered artificial intelligence in smart manufacturing for the operator 4.0; operations management in engineer-to-order manufacturing; product and asset life cycle management for smart and sustainable manufacturing systems; robotics technologies for control, smart manufacturing and logistics; serious games analytics: improving games and learning support; smart and sustainable production and supply chains; smart methods and techniques for sustainable supply chain management; the new digital lean manufacturing paradigm; and the role of emerging technologies in disaster relief operations: lessons from COVID-19 Part V: data-driven platforms and applications in production and logistics: digital twins and AI for sustainability; regular session: new approaches for routing problem solving; regular session: improvement of design and operation of manufacturing systems; regular session: crossdock and transportation issues; regular session: maintenance improvement and lifecycle management; regular session: additive manufacturing and mass customization; regular session: frameworks and conceptual modelling for systems and services efficiency; regular session: optimization of production and transportation systems; regular session: optimization of supply chain agility and reconfigurability; regular session: advanced modelling approaches; regular session: simulation and optimization of systems performances; regular session: AI-based approaches for quality and performance improvement of production systems; and regular session: risk and performance management of supply chains *The conference was held online.

Intelligent Information and Database Systems - Paweł Sitek 2020-03-03

This volume constitutes the refereed proceedings of the 12th Asian Conference on Intelligent Information and Database Systems, ACIIDS 2020, held in Phuket, Thailand, in March 2020. The total of 50 full papers accepted for publication in these proceedings were carefully reviewed and selected from 180 submissions. The papers are organized in the following topical sections: advanced big data, machine learning and data mining; industry applications of intelligent methods and systems; artificia intelligence, optimization, and databases in practical applications; intelligent applications of internet of things; recommendation and user centric applications of intelligent systems.

Research and Innovation Forum 2021 - Anna Visvizi 2021

This book features research presented and discussed during the Research and Innovation Forum (Rii Forum) 2021. The Covid-19 pandemic and its social, political, and economic implications had confirmed that a more thorough debate on these issues and topics was needed. For this reason, the Rii Forum 2021 was devoted to the broadly defined question of the short- and long-term impact of the pandemic on our societies. This volume serves as an essential resource to understand the diverse ways in which Covid-19 impacted our societies, including the capacity to innovate, advances in technology, the evolution of the healthcare systems, business model innovation, the prospects of growth, the stability of political systems, and the future of education.

Research in Attacks, Intrusions, and Defenses - Michael Bailey 2018-09-06

This book constitutes the refereed proceedings of the 21st International Symposium on Research in Attacks, Intrusions, and Defenses, RAID 2018, held in Heraklion, Crete, Greece, in September 2018. The 32 revised full papers were carefully reviewed and selected from 145 submissions. They are organized in the following topical sections: attacks; intrusion detection and prevention; DDoS attacks; passwords, accounts, and users; machine learning for computer security; hardware-assisted security; software security; malware; IoT/CPS security; security measurements; and defenses.