Iot Solutions In Microsoft S Azure Iot Suite

Microsoft Azure Security InfrastructureIoT Solutions in Microsoft's Azure IoT SuiteLPWAN Technologies for IoT and M2M ApplicationsBuilding Blocks for IoT AnalyticsAdvanced Computing Strategies for EngineeringIndustrial IoT Technologies and ApplicationsGetting Started with the Internet of ThingsDemystifying Internet of Things SecurityLearn Azure in a Month of Lunches, Second EditionMastering Azure AnalyticsInternet of ThingsAzure Internet of Things RevealedAzure for ArchitectsAzure IoT Development CookbookThe Future ComputedInnovations in Smart Cities Applications Edition 3Microsoft Azure Security CenterSecuring the Internet of ThingsProgramming for the Internet of ThingsBriggsEmergence of Pharmaceutical Industry Growth with Industrial IoT ApproachAnalytics for the Internet of Things (IoT)Enterprise IoTIoT, AI, and Blockchain for .NETPractical Azure FunctionsI-Bytes Technology IndustryBeginning Azure IoT Edge ComputingThe Ultimate Guide to Microsoft CertificationBuilding the Hyperconnected SocietyInternet-of-Things (IoT) SystemsEnterprise IotIoT Security Paradigms and ApplicationsInternet of Things in Biomedical EngineeringMicrosoft Azure Essentials Azure Machine LearningArchitecting Microsoft Azure Solutions – Exam Guide 70-535Advanced Intelligent Systems for Sustainable Development (AI2SD'2019)Microsoft Azure Essentials - Fundamentals of AzureMicroservices, IoT and AzureInternet of ThingsHands-On Azure for

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Developers

Microsoft Azure Security Infrastructure

Rapidly implement Internet of Things solutions Creating programs for the Internet of Things offers you an opportunity to build and program custom devices whose functionality is limited only by your imagination. This book teaches you to do exactly that, with solutions presented in a step-by-step format. When you read this book, you not only learn the fundamentals of device programming, you will also be ready to write code for revolutionizing devices and robots. You don't need to be an expert in low-level programming to benefit from this book. It explains basic concepts and programming techniques before diving into the more complicated topics. Each of the book's chapters and appendices contains a suitable level of detail to help you quickly master device programming. MCP Dawid Borycki shows you how to: Build Universal Windows Platform (UWP) applications that target interconnected embedded devices Design and implement background apps for seamless integration with hardware components Use intrinsic UWP functionality to detect and track human faces Build artificial auditory, visual, and learning systems Process audio signals to blink LEDs to the rhythm of music Use OpenCV to develop custom image-processing algorithms Communicate with external devices by using serial, USB, Wi-Fi, and AllJoyn connectivity Design and implement applications to control DC, stepper, and servo motors for robotics Use Microsoft Cognitive Services to detect human

emotions Build predictive analysis and preventive maintenance systems by using the Azure IoT Suite

IoT Solutions in Microsoft's Azure IoT Suite

Design, build, and justify an optimal Microsoft IoT footprint to meet your project needs. This book describes common Internet of Things components and architecture and then focuses on Microsoft's Azure components relevant in deploying these solutions. Microsoft-specific topics addressed include: deploying edge devices and pushing intelligence to the edge; connecting IoT devices to Azure and landing data there, applying Azure Machine Learning, analytics, and Cognitive Services; roles for Microsoft solution accelerators and managed solutions; and integration of the Azure footprint with legacy infrastructure. The book concludes with a discussion of best practices in defining and developing solutions and creating a plan for success. What You Will Learn Design the right IoT architecture to deliver solutions for a variety of project needs Connect IoT devices to Azure for data collection and delivery of services Use Azure Machine Learning and Cognitive Services to deliver intelligence in cloud-based solutions and at the edge Understand the benefits and tradeoffs of Microsoft's solution accelerators and managed solutions Investigate new use cases that are described and apply best practices in deployment strategies Integrate cutting-edge Azure deployments with existing legacy data sources Who This Book Is For Developers and architects new to IoT projects or new to Microsoft Azure IoT components as

well as readers interested in best practices used in architecting IoT solutions that utilize the Azure platform

LPWAN Technologies for IoT and M2M Applications

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Implement maximum control, security, and compliance processes in Azure cloud environments In Microsoft Azure Security Infrastructure ,1/e three leading experts show how to plan, deploy, and operate Microsoft Azure with outstanding levels of control, security, and compliance. You'll learn how to prepare infrastructure with Microsoft's integrated tools, prebuilt templates, and managed services–and use these to help safely build and manage any enterprise, mobile, web, or Internet of Things (IoT) system. The authors guide you through enforcing, managing, and verifying robust security at physical, network, host, application, and data layers. You'll learn best practices for security-aware deployment, operational management, threat mitigation, and continuous improvement–so you can help protect all your data, make services resilient to attack, and stay in control no matter how your cloud systems evolve. Three Microsoft Azure experts show you how to: • Understand cloud security boundaries and responsibilities • Plan for compliance, risk management, identity/access management, operational security, and endpoint and data

protection • Explore Azure's defense-in-depth security architecture • Use Azure network security patterns and best practices • Help safeguard data via encryption, storage redundancy, rights management, database security, and storage security • Help protect virtual machines with Microsoft Antimalware for Azure Cloud Services and Virtual Machines • Use the Microsoft Azure Key Vault service to help secure cryptographic keys and other confidential information • Monitor and help protect Azure and on-premises resources with Azure Security Center and Operations Management Suite • Effectively model threats and plan protection for IoT systems • Use Azure security tools for operations, incident response, and forensic investigation

Building Blocks for IoT Analytics

This book provides practical guidance for adopting a high velocity, continuous delivery process to create reliable, scalable, Software-as-a-Service (SaaS) solutions that are designed and built using a microservice architecture, deployed to the Azure cloud, and managed through automation. Microservices, IoT, and Azure offers software developers, architects, and operations engineers' step-by-step directions for building SaaS applications—applications that are available 24x7, work on any device, scale elastically, and are resilient to change--through code, script, exercises, and a working reference implementation. The book provides a working definition of microservices and contrasts this approach with traditional monolithic Layered

Architecture. A fictitious, homebiomedical startup is used to demonstrate microservice architecture and automation capabilities for cross-cutting and business services as well as connected device scenarios for Internet of Things (IoT). Several Azure PaaS services are detailed including Storage, SQL Database, DocumentDb, Redis Cache, Cloud Services, Web API's, API Management, IoT Hub, IoT Suite, Event Hub, and Stream Analytics. Finally the book looks to the future and examines Service Fabric to see how microservices are becoming the de facto approach to building reliable software in the cloud. In this book, you'll learn: What microservices are and why are they're a compelling architecture pattern for SaaS applications How to design, develop, and deploy microservices using Visual Studio, PowerShell, and Azure Microservice patterns for cross-cutting concerns and business capabilities Microservice patterns for Internet of Things and big data analytics solutions using IoT Hub, Event Hub, and Stream Analytics Techniques for automating microservice provisioning, building, and deployment What Service Fabric is and how it's the future direction for microservices on Microsoft Azure

Advanced Computing Strategies for Engineering

Your one stop guide to making the most out of Azure Cloud About This Book Get familiar with the different design patterns available in Microsoft Azure Develop Azure cloud architecture and a pipeline management system Get to know the security best practices for

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your Azure deployment Who This Book Is For If you are Cloud Architects, DevOps Engineers, or developers who want to learn key architectural aspects of the Azure Cloud platform, then this book is for you. Prior basic knowledge of the Azure Cloud platform is good to have. What You Will Learn Familiarize yourself with the components of the Azure Cloud platform Understand the cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement Serverless solutions See Cloud architecture and the deployment pipeline Understand cost management for Azure solutions In Detail Over the years, Azure cloud services has grown quickly, and the number of organizations adopting Azure for their cloud services is also gradually increasing. Leading industry giants are finding that Azure fulfills their extensive cloud requirements. This book will guide you through all the important and tough decision-making aspects involved in architecturing a Azure public cloud for your organization. The book starts with an extensive introduction to all the categories of designs available with Azure. These design patterns focus on different aspects of cloud such as high availability, data management, and so on. Gradually, we move on to various aspects such as building your cloud structure and architecture. It will also include a brief description about different types of services provided by Azure, such as Azure functions and Azure Analytics, which can prove beneficial for an organization. This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements. By the end of this book, you will be in a position to develop a full-fledged Azure cloud. Style

and approach This hands-on guide to the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment.

Industrial IoT Technologies and Applications

Create applications using Industry 4.0. Discover how artificial intelligence (AI) and machine learning (ML) capabilities can be enhanced using the Internet of things (IoT) and secured using Blockchain, so your latest app can be not just smarter but also more connected and more secure than ever before. This book covers the latest easy-to-use APIs and services from Microsoft, including Azure IoT, Cognitive Services APIs, Blockchain as a Service (BaaS), and Machine Learning Studio. As you work through the book, you'll get hands-on experience building an example solution that uses all of these technologies—an IoT suite for a smart healthcare facility. Hosted on Azure and networked using Azure IoT, the solution includes centralized patient monitoring, using Cognitive Services APIs for face detection, recognition, and tracking. Blockchain is used to create trust-based security and inventory management. Machine learning is used to create predictive solutions to proactively improve quality of life. By the end of the book, you'll be confident creating richer and smarter applications using these technologies. What You'll Learn Know the technologies underpinning Industry 4.0 and AI 2.0 Develop real-time solutions using IoT in Azure Bring the smart capabilities of AI 2.0 into your

application using a simple API call Host and manage your solution on Azure Understand Blockchain as a Service Capture and analyze data on the fly Make predictions using existing data Who This Book Is For Novice and intermediate .NET developers and architects who want to learn what it takes to create a modern or next-generation application

Getting Started with the Internet of Things

Break through the hype and learn how to extract actionable intelligence from the flood of IoT data About This Book Make better business decisions and acquire greater control of your IoT infrastructure Learn techniques to solve unique problems associated with IoT and examine and analyze data from your IoT devices Uncover the business potential generated by data from IoT devices and bring down business costs Who This Book Is For This book targets developers, IoT professionals, and those in the field of data science who are trying to solve business problems through IoT devices and would like to analyze IoT data. IoT enthusiasts, managers, and entrepreneurs who would like to make the most of IoT will find this equally useful. A prior knowledge of IoT would be helpful but is not necessary. Some prior programming experience would be useful What You Will Learn Overcome the challenges IoT data brings to analytics Understand the variety of transmission protocols for IoT along with their strengths and weaknesses Learn how data flows from the IoT device to the final data set Develop techniques to wring value from IoT data

Apply geospatial analytics to IoT data Use machine learning as a predictive method on IoT data Implement best strategies to get the most from IoT analytics Master the economics of IoT analytics in order to optimize business value In Detail We start with the perplexing task of extracting value from huge amounts of barely intelligible data. The data takes a convoluted route just to be on the servers for analysis, but insights can emerge through visualization and statistical modeling techniques. You will learn to extract value from IoT big data using multiple analytic techniques. Next we review how IoT devices generate data and how the information travels over networks. You'll get to know strategies to collect and store the data to optimize the potential for analytics, and strategies to handle data quality concerns. Cloud resources are a great match for IoT analytics, so Amazon Web Services, Microsoft Azure, and PTC ThingWorx are reviewed in detail next. Geospatial analytics is then introduced as a way to leverage location information. Combining IoT data with environmental data is also discussed as a way to enhance predictive capability. We'll also review the economics of IoT analytics and you'll discover ways to optimize business value. By the end of the book, you'll know how to handle scale for both data storage and analytics, how Apache Spark can be leveraged to handle scalability, and how R and Python can be used for analytic modeling. Style and approach This book follows a step-by-step, practical approach to combine the power of analytics and IoT and help you get results quickly

Demystifying Internet of Things Security

How do you start? How should you build a plan for cloud migration for your entire portfolio? How will your organization be affected by these changes? This book, based on real-world cloud experiences by enterprise IT teams, seeks to provide the answers to these questions. Here, you'll see what makes the cloud so compelling to enterprises; with which applications you should start your cloud journey; how your organization will change, and how skill sets will evolve; how to measure progress; how to think about security, compliance, and business buy-in; and how to exploit the ever-growing feature set that the cloud offers to gain strategic and competitive advantage.

Learn Azure in a Month of Lunches, Second Edition

This book aims to provide a broad overview of various topics of Internet of Things (IoT), ranging from research, innovation and development priorities to enabling technologies, nanoelectronics, cyber-physical systems, architecture, interoperability and industrial applications. All this is happening in a global context, building towards intelligent, interconnected decision making as an essential driver for new growth and co-competition across a wider set of markets. It is intended to be a standalone book in a series that covers the Internet of Things activities of the IERC – Internet of Things European Research Cluster from research to technological innovation, validation and deployment. The book builds on the ideas put forward

by the European Research Cluster on the Internet of Things Strategic Research and Innovation Agenda, and presents global views and state of the art results on the challenges facing the research, innovation, development and deployment of IoT in future years. The concept of IoT could disrupt consumer and industrial product markets generating new revenues and serving as a growth driver for semiconductor, networking equipment, and service provider end-markets globally. This will create new application and product end-markets, change the value chain of companies that creates the IoT technology and deploy it in various end sectors, while impacting the business models of semiconductor, software, device, communication and service provider stakeholders. The proliferation of intelligent devices at the edge of the network with the introduction of embedded software and app-driven hardware into manufactured devices, and the ability, through embedded software/hardware developments, to monetize those device functions and features by offering novel solutions, could generate completely new types of revenue streams. Intelligent and IoT devices leverage software, software licensing, entitlement management, and Internet connectivity in ways that address many of the societal challenges that we will face in the next decade.

Mastering Azure Analytics

Which Microsoft Certification should you choose? This book give you the answers you need, so you can advance your career."I find this book quite useful

based on what I have seen so far. And I believe, it's gonna be a good resource to learn more about the updated Microsoft certifications" - Shashi KumarMicrosoft Certification offers learning and career growth paths for self-paced learners looking to grow their skills and stay up-to-date in the rapidly changing landscape of the Microsoft Azure cloud.What certifications are available for beginners, or experienced engineers? What about for those new to IT? What about for the experts looking to go the extra mile? Find out how to earn the certification that is best for you, your experience, and your individual career goal!

Internet of Things

This proceedings book presents extended versions of papers on advanced intelligent systems for networks and system selected from the second edition of the International Conference on Advanced Intelligent Systems for Sustainable Development (AI2SD'2019), which was held on 8–11 July 2019 in Marrakech, Morocco. The book explores a number of aspects of networks and systems design issues, and focuses on the latest research developments in a number of areas, including various aspects of modern networking such as smart networked systems, network protocols and performance, security and privacy, mobile and wireless systems, Internet of things, artificial intelligence and expert systems, and cloud computing, as well as enabling technologies. The book also examines the area of intelligence, comprehensively examining a range of important

topics like intelligent collaborative systems for work and learning, security, organization, management and autonomic computing for intelligent networking and collaborative systems, wireless and sensor systems for intelligent networking and collaborative systems, data mining and knowledge management for intelligent networking and collaborative systems, data for Internet of things, and cloud computing. Each chapter presents the state of the art in a specific topic as well as the results of research and laboratory experiments, and successful applications. The book is intended for academic and industry researchers and telecommunication network engineers wanting to gain insights into these areas, particularly in the context of Industry 4.0.

Azure Internet of Things Revealed

Over 50 recipes to drive IoT innovation with Microsoft Azure About This Book Build secure and scalable IoT solutions with Azure IoT platform Learn techniques to build end to end IoT solutions leveraging the Azure IoT platform Filled with practical recipes to help you increase connectivity and automation across IoT devices Who This Book Is For If you are an application developer and want to build robust and secure IoT solution for your organization using Azure IoT, then this book is for you. What You Will Learn Build IoT Solutions using Azure IoT & Services Learn device configuration and communication protocols Understand IoT Suite and Pre-configured solutions Manage Secure Device communications Understand Device management, alerts Introduction with IoT

Analytics, reference IoT Architectures Reference Architectures from Industry Pre-Configured IoT Suite solutions In Detail Microsoft's end-to-end IoT platform is the most complete IoT offering, empowering enterprises to build and realize value from IoT solutions efficiently. It is important to develop robust and reliable solutions for your organization to leverage IoT services. This book focuses on how to start building custom solutions using the IoT hub or the preconfigured solution of Azure IoT suite. As a developer, you will be taught how to connect multiple devices to the Azure IoT hub, develop, manage the IoT hub service and integrate the hub with cloud. We will be covering REST APIs along with HTTP, MQTT and AMQP protocols. It also helps you learn Pre-Configured IoT Suite solution. Moving ahead we will be covering topics like:-Process device-to-cloud messages and cloud-to-device messages using .Net-Direct methods and device management-Query Language, Azure IoT SDK for .Net-Creating and managing, Securing IoT hub, IoT Suite and many more. We will be using windows 10 IoT core, Visual Studio, universal Windows platform. At the end, we will take you through IoT analytics and provide a demo of connecting real device with Azure IoT. Style and approach A set of exciting recipes of using Microsoft Azure IoT more effectively.

Azure for Architects

LPWAN Technologies for IoT and M2M Applications provides insight into LPWAN technologies, also presenting a wide range of applications and a

discussion on security issues and future challenges and research directions. This book is a beneficial and insightful resource for university researchers, graduate students and R&D engineers who are designing networks and implementing IoT applications. To support new requirements for this emerging industry, a new paradigm of Low Power Wide Area Networks (LPWAN) has recently evolved, including LoRa, Sigfox and NB-IoT, hence this book presents the latest updates.

Azure IoT Development Cookbook

The concept of Internet of Things has silently existed since the late nineteenth century but in the current decade expectations and excitement has peaked. However not many have understood the profound change that it can usher in. How big this change can be and how it can transform our working!! This book aims to bring in this realization with illustrative and practical case studies with comprehensive concepts. From beginners to practitioners in the field of academics or industry, it serves as a comprehensive yet easy to comprehend source of information on the multiple facets of IoT. Simplistic but comprehensive introduction of the facets of primarily the industrial IoT Practical adoption cases explaining the Core technology stack and business applications Comprehensive view of current technologies which complete the IoT delivery ecosystem, followed by overview of IoT enabled new business models. Realistic view of how industrial firms can evolve into the next stage of maturity along with determinants

influencing this transformation since manufacturing is envisioned to be a key segment to adopt and benefit from IoT. Detailed analysis of IoT benefits for the universal triad- energy management, logistics optimization and distribution channel management. A full-fledged case study on Adoption of Green manufacturing using IoT. Real world example of gauging End User perception using different models which is important for a successful adoption of IoT. A futuristic visionary view of IoT as comprehended based on evolution of technology and platforms, and finally analysis of the extremely crucial concepts of security, privacy and governance. ologies which complete the IoT delivery ecosystem, followed by overview of IoT enabled new business models. Realistic view of how industrial firms can evolve into the next stage of maturity along with determinants influencing this transformation since manufacturing is envisioned to be a key segment to adopt and benefit from IoT. Detailed analysis of IoT benefits for the universal triad- energy management, logistics optimization and distribution channel management. A full-fledged case study on Adoption of Green manufacturing using IoT. Real world example of gauging End User perception using different models which is important for a successful adoption of IoT. A futuristic visionary view of IoT as comprehended based on evolution of technology and platforms, and finally analysis of the extremely crucial concepts of security, privacy and governance. latforms, and finally analysis of the extremely crucial concepts of security, privacy and governance.

The Future Computed

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Industrial IoT Technologies and Applications, IoT 2017, held in Wuhu, China, in March 2017. The volume contains 25 papers carefully reviewed and selected from 41 submissions focusing on topics such as big data, cloud computing, Internet of things, areas of control, mobile computing, and security.

Innovations in Smart Cities Applications Edition 3

Use a step-by-step process to create and deploy your first Azure IoT Edge solution. Modern day developers and architects in today's cloud-focused world must understand when it makes sense to leverage the cloud. Computing on the edge is a new paradigm for most people. The Azure IoT Edge platform uses many existing technologies that may be familiar to developers, but understanding how to leverage those technologies in an edge computing scenario can be challenging. Beginning Azure IoT Edge Computing demystifies computing on the edge and explains, through concrete examples and exercises, how and when to leverage the power of intelligent edge computing. It introduces the possibilities of intelligent edge computing using the Azure IoT Edge platform, and guides you through hands-on exercises to make edge computing approachable, understandable, and highly useful. Through user-friendlydiscussion you will

not only understand how to build edge solutions, but also when to build them. By explaining some common solution patterns, the decision on when to use the cloud and when to avoid the cloud will become much clearer. What You'll Learn Create and deploy Azure IoT Edge solutions Recognize when to leverage the intelligent edge pattern and when to avoid it Leverage the available developer tooling to develop and debug IoT Edge solutions Know which off-the-shelf edge computing modules are available Become familiar with some of the lesser-known device protocols used in conjunction with edge computing Understand how to securely deploy and bootstrap an IoT Edge device Explore related topics such as containers and secure device provisioning Who This Book Is For Developers or architects who want to understand edge computing and when and where to use it. Readers should be familiar with C# or Python and have a high-level understanding of the Azure IoT platform.

Microsoft Azure Security Center

Gain practical skills with Azure and understand how to start developing scalable and easy-to-maintain cloud applications Key Features Get up and running with the development aspects of Azure cloud Build fault-tolerant and scalable applications on Azure A practical, developer-centric guide for Azure developers Book Description Microsoft Azure is one of the fastest growing public cloud service providers in the market currently, and also holds the second highest market share after AWS. Azure has a

sophisticated set of services that will help you build fault-tolerant and scalable cloud-based applications. Hands-On Azure for Developers will take you on a journey through multiple PaaS services available in Azure, including App Services, Functions, and Service Fabric, and explain in detail how to build a complete and reliable system with ease. You will learn about how to maximize your skills when building cloud-based solutions leveraging different SQL/NoSQL databases, serverless and messaging components, and even search engines such as Azure Search. In the concluding chapters, this book covers more advanced scenarios such as scalability best practices, serving static content with Azure CDN, and distributing loads with Azure Traffic Manager. By the end of the book, you will be able to build modern applications on the Azure cloud using the most popular and promising technologies, which will help make your solutions reliable, stable, and efficient. What you will learn Implement serverless components such as Azure functions and logic apps Integrate applications with available storages and containers Understand messaging components, including Azure Event Hubs and Azure Queue Storage Gain an understanding of Application Insights and other proper monitoring solutions Store your data with services such as Azure SQL and Azure Data Lake Storage Develop fast and scalable cloud applications Who this book is for Hands-On Azure for Developers is for developers who want to build highly scalable cloud-based applications on Azure. Prior knowledge of Azure services will be an added advantage.

Securing the Internet of Things

Securing the Internet of Things provides network and cybersecurity researchers and practitioners with both the theoretical and practical knowledge they need to know regarding security in the Internet of Things (IoT). This booming field, moving from strictly research to the marketplace, is advancing rapidly, yet security issues abound. This book explains the fundamental concepts of IoT security, describing practical solutions that account for resource limitations at IoT end-node, hybrid network architecture, communication protocols, and application characteristics. Highlighting the most important potential IoT security risks and threats, the book covers both the general theory and practical implications for people working in security in the Internet of Things. Helps researchers and practitioners understand the security architecture in IoT and the state-of-the-art in IoT security countermeasures Explores how the threats in IoT are different from traditional ad hoc or infrastructural networks Provides a comprehensive discussion on the security challenges and solutions in RFID, WSNs, and IoT Contributed material by Dr. Imed Romdhani

Programming for the Internet of Things

Current hype aside, the Internet of Things will ultimately become as fundamental as the Internet itself, with lots of opportunities and trials along the way. To help you navigate these choppy waters, this practical guide introduces a dedicated methodology

for businesses preparing to transition towards IoT-based business models. With a set of best practices based on case study analysis, expert interviews, and the authors' own experience, the Ignite | IoT Methodology outlined in this book delivers actionable guidelines to assist you with IoT strategy management and project execution. You'll also find a detailed case study of a project fully developed with this methodology. This book consists of three parts: Illustrative case studies of selected IoT domains, including smart energy, connected vehicles, manufacturing and supply chain management, and smart cities The Ignite | IoT Methodology for defining IoT strategy, preparing your organization for IoT adoption, and planning and executing IoT projects A detailed case study of the IIC Track & Trace testbed, one of the first projects to be fully developed according to the Ignite | IoT Methodology

Briggs

This document brings together a set of latest data points and publicly available information relevant for Technology Industry. We are very excited to share this content and believe that readers will benefit from this periodic publication immensely.

Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach

This book covers essential topics in the architecture and design of Internet of Things (IoT) systems. The authors provide state-of-the-art information that

enables readers to design systems that balance functionality, bandwidth, and power consumption, while providing secure and safe operation in the face of a wide range of threat and fault models. Coverage includes essential topics in system modeling, edge/cloud architectures, and security and safety, including cyberphysical systems and industrial control systems.

Analytics for the Internet of Things (IoT)

Helps users understand the breadth of Azure services by organizing them into a reference framework they can use when crafting their own big-data analytics solution.

Enterprise IoT

Discover high-value Azure security insights, tips, and operational optimizations This book presents comprehensive Azure Security Center techniques for safeguarding cloud and hybrid environments. Leading Microsoft security and cloud experts Yuri Diogenes and Dr. Thomas Shinder show how to apply Azure Security Center's full spectrum of features and capabilities to address protection, detection, and response in key operational scenarios. You'll learn how to secure any Azure workload, and optimize virtually all facets of modern security, from policies and identity to incident response and risk management. Whatever your role in Azure security, you'll learn how to save hours, days, or even weeks by solving problems in most efficient, reliable ways

possible. Two of Microsoft's leading cloud security experts show how to: • Assess the impact of cloud and hybrid environments on security, compliance, operations, data protection, and risk management • Master a new security paradigm for a world without traditional perimeters • Gain visibility and control to secure compute, network, storage, and application workloads • Incorporate Azure Security Center into your security operations center • Integrate Azure Security Center with Azure AD Identity Protection Center and third-party solutions • Adapt Azure Security Center's built-in policies and definitions for your organization • Perform security assessments and implement Azure Security Center recommendations • Use incident response features to detect, investigate, and address threats • Create high-fidelity fusion alerts to focus attention on your most urgent security issues • Implement application whitelisting and just-in-time VM access • Monitor user behavior and access, and investigate compromised or misused credentials • Customize and perform operating system security baseline assessments • Leverage integrated threat intelligence to identify known bad actors

IoT, AI, and Blockchain for .NET

Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. Summary You can be incredibly productive with Azure without mastering

every feature, function, and service. Learn Azure in a Month of Lunches, Second Edition gets you up and running quickly, teaching you the most important concepts and tasks in 21 practical bite-sized lessons. As you explore the examples, exercises, and labs, you'll pick up valuable skills immediately and take your first steps to Azure mastery! This fully revised new edition covers core changes to the Azure UI, new Azure features, Azure containers, and the upgraded Azure Kubernetes Service. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microsoft Azure is vast and powerful, offering virtual servers, application templates, and prebuilt services for everything from data storage to AI. To navigate it all, you need a trustworthy guide. In this book, Microsoft engineer and Azure trainer Iain Foulds focuses on core skills for creating cloud-based applications. About the book Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. What's inside Understanding Azure beyond point-and-click Securing applications and data Automating your environment Azure services for machine learning, containers, and more About the reader This book is for readers who can write and deploy simple web or client/server applications. About the author Iain Foulds is an engineer and senior content developer with Microsoft. Table of Contents PART 1 - AZURE CORE SERVICES 1 Before you begin 2 Creating a virtual machine 3 Azure Web Apps 4 Introduction to

Azure Storage 5 Azure Networking basics PART 2 - HIGH AVAILABILITY AND SCALE 6 Azure Resource Manager 7 High availability and redundancy 8 Load-balancing applications 9 Applications that scale 10 Global databases with Cosmos DB 11 Managing network traffic and routing 12 Monitoring and troubleshooting PART 3 - SECURE BY DEFAULT 13 Backup, recovery, and replication 14 Data encryption 15 Securing information with Azure Key Vault 16 Azure Security Center and updates PART 4 - THE COOL STUFF 17 Machine learning and artificial intelligence 18 Azure Automation 19 Azure containers 20 Azure and the Internet of Things 21 Serverless computing

Practical Azure Functions

Integration of IoT (Internet of Things) with big data and cloud computing has brought forward numerous advantages and challenges such as data analytics, integration, and storage. This book highlights these challenges and provides an integrating framework for these technologies, illustrating the role of blockchain in all possible facets of IoT security. Furthermore, it investigates the security and privacy issues associated with various IoT systems along with exploring various machine learning-based IoT security solutions. This book brings together state-of-the-art innovations, research activities (both in academia and in industry), and the corresponding standardization impacts of 5G as well. Aimed at graduate students, researchers in computer science and engineering, communication networking, IoT, machine learning and

pattern recognition, this book Showcases the basics of both IoT and various security paradigms supporting IoT, including Blockchain Explores various machine learning-based IoT security solutions and highlights the importance of IoT for industries and smart cities Presents various competitive technologies of Blockchain, especially concerned with IoT security Provides insights into the taxonomy of challenges, issues, and research directions in IoT-based applications Includes examples and illustrations to effectively demonstrate the principles, algorithm, applications, and practices of security in the IoT environment

I-Bytes Technology Industry

This book highlights original research and recent advances in various fields related to smart cities and their applications. It gathers papers presented at the Fourth International Conference on Smart City Applications (SCA19), held on October 2–4, 2019, in Casablanca, Morocco. Bringing together contributions by prominent researchers from around the globe, the book offers an invaluable instructional and research tool for courses on computer science, electrical engineering, and urban sciences. It is also an excellent reference guide for professionals, researchers, and academics in the field of smart cities. This book covers topics including: • Smart Citizenship • Smart Education • Digital Business and Smart Governance • Smart Health Care • New Generation of Networks and Systems for Smart Cities • Smart Grids and Electrical Engineering • Smart

Mobility • Smart Security • Sustainable Building • Sustainable Environment

Beginning Azure IoT Edge Computing

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. This third ebook in the series introduces Microsoft Azure Machine Learning, a service that a developer can use to build predictive analytics models (using training datasets from a variety of data sources) and then easily deploy those models for consumption as cloud web services. The ebook presents an overview of modern data science theory and principles, the associated workflow, and then covers some of the more common machine learning algorithms in use today. It builds a variety of predictive analytics models using real world data, evaluates several different machine learning algorithms and modeling strategies, and then deploys the finished models as machine learning web services on Azure within a matter of minutes. The ebook also expands on a working Azure Machine Learning predictive model example to explore the types of client and server applications you can create to consume Azure Machine Learning web services. Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the Microsoft Azure Essentials series.

The Ultimate Guide to Microsoft Certification

Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach uses an innovative approach to explore how the Internet of Things (IoT) and big data can improve approaches, create efficiencies and make discoveries. Rapid growth of the IoT has encouraged many companies in the manufacturing sector to make use of this technology to unlock its potential. Pharmaceutical manufacturing companies are no exception to this, as IoT has the potential to revolutionize aspects of the pharmaceutical manufacturing process, from drug discovery to manufacturing. Using clear, concise language and real world case studies, this book discusses systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing. The wide variety of topics presented offers readers multiple perspectives on a how to integrate the Internet of Things into pharmaceutical manufacturing. Covers efficiency improvements of pharmaceutical manufacturing through IoT/Big Data approaches Explores cutting-edge technologies through sensor enabled environment in the pharmaceutical industry Discusses the systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing

Building the Hyperconnected Society

Collect and analyze sensor and usage data from Internet of Things applications with Microsoft Azure IoT Suite. Internet connectivity to everyday devices such as light bulbs, thermostats, and even voice-

command devices such as Google Home and Amazon.com's Alexa is exploding. These connected devices and their respective applications generate large amounts of data that can be mined to enhance user-friendliness and make predictions about what a user might be likely to do next. Microsoft's Azure IoT Suite is a cloud-based platform that is ideal for collecting data from connected devices. You'll learn in this book about data acquisition and analysis, including real-time analysis. Real-world examples are provided to teach you to detect anomalous patterns in your data that might lead to business advantage. We live in a time when the amount of data being generated and stored is growing at an exponential rate. Understanding and getting real-time insight into these data is critical to business. IoT Solutions in Microsoft's Azure IoT Suite walks you through a complete, end-to-end journey of how to collect and store data from Internet-connected devices. You'll learn to analyze the data and to apply your results to solving real-world problems. Your customers will benefit from the increasingly capable and reliable applications that you'll be able to deploy to them. You and your business will benefit from the gains in insight and knowledge that can be applied to delight your customers and increase the value from their business. What You'll Learn Go through data generation, collection, and storage from sensors and devices, both relational and non-relational Understand, from end to end, Microsoft's analytic services and where they fit into the analytical ecosystem Look at the Internet of your things and find ways to discover and draw on the insights your data can provide Understand Microsoft's IoT technologies

and services, and stitch them together for business insight and advantage Who This Book Is For Developers and architects who plan on delivering IoT solutions, data scientists who want to understand how to get better insights into their data, and anyone needing or wanting to do real-time analysis of data from the Internet of Things

Internet-of-Things (IoT) Systems

Internet of Things (IoT) is one of the most hyped concept in today's technology world. However, with so much hype, still there is a lot of confusion on what does Internet of Things actually mean and what it takes to build IoT applications and how to apply it in various industries. There exist many definitions on "Internet of Things" and even getting on to a same terminology and definition seems difficult nowadays. We have seen multiple definitions over a period of time, such as 'Internet of Everything', 'Internet of your Things', 'Internet of People' and the list goes on. They all mean the same, so let's start with a simple definition of Internet of Things. "Internet of Things is a vision where every object in the world has the potential to connect to the Internet and provide their data so as to derive actionable insights on its own or through other connected objects" The object can be anything - a vehicle, machinery, airport, city, people, phone or even a shoe. From a connected vehicle solution, you can understand the driver behaviour and vehicle usage patterns, from a connected machines solution you can determine when do machines need servicing, from a connected airport solution you can

understand many things like - how much time the passenger needs to wait for check-in and security, from an operating perspective it could help to optimize the passenger movement and ensure the right equipments are available at the right time to ensure quick serviceability and finally say, from a connected footwear solution you can understand how much you have run so far and your app can automatically purchase a new pair of shoes based on the remaining shoe life. As we can see, it's not just about connectivity, but how to use the connected data in context of your application or for that matter other connected solutions to derive insights which can't be uncovered before. Today we are seeing data (both structured and unstructured) growing by leaps and bounds available through mediums like blogs, social media, transactional systems etc. With advent of IoT, you will see a large volume of raw data emitting from devices like sensors. Such huge and complex set of data, if not attended to, can go wasted and opportunity lost in terms of building smart environment around us. While focusing on issue of addressing this web of complexity, often understanding the real benefit of IoT is lost and most importantly how to get started on IoT. In this book, our focus will be to provide a clear vision on IoT and everything you should know to get started on applying and building Enterprise IoT applications in any industry. The concepts listed down in the book are applicable across industries. Till date, it's difficult to find a single perspective of what does an Enterprise IoT stack actually mean and our intent is to provide an applicability guide that can be taken as reference for building any IoT application. In the course of the

book, we would describe some of the key components of Internet of Things through our Enterprise IoT stack. We would look at how to incrementally apply IoT transformations to build connected products in various industries. At the end, we would understand the technical strategy and how to build IoT applications using IoT cloud offerings from Microsoft, IBM, and Amazon and even build one using open source technologies. To summarize, as part of the book we would cover the following - * A detailed overview of key components of Internet of Things and most comprehensive view of an Enterprise IoT stack. * How to apply IoT in context of real world applications by covering detailed use cases on manufacturing, automotive and home automation. * Understand the technical strategy and how to implement IoT applications using Microsoft Azure and IoT Suite, IBM Internet of Things Foundation and BlueMix, Amazon IoT and AWS services and various open source technologies like Apache Kakfa, Apache Spark and map it to our Enterprise IoT Stack.

Enterprise Iot

"AI will enable breakthrough advances in areas like healthcare, agriculture, education and transportation. It's already happening in impressive ways. But as we've witnessed over the past 20 years, new technology also inevitably raises complex questions and broad societal concerns." - Brad Smith and Harry Shum on The Future Computed. "As we look to a future powered by a partnership between computers and humans, it's important that we address these

challenges head on. How do we ensure that AI is designed and used responsibly? How do we establish ethical principles to protect people? How should we govern its use? And how will AI impact employment and jobs?" - Brad Smith and Harry Shum on The Future Computed. As Artificial Intelligence shows up in every aspect of our lives, Microsoft's top minds provide a guide discussing how we should prepare for the future. Whether you're a government leader crafting new laws, an entrepreneur looking to incorporate AI into your business, or a parent contemplating the future of education, this book explains the trends driving the AI revolution, identifies the complex ethics and workforce issues we all need to think about and suggests a path forward.Read more:The Future Computed: Artificial Intelligence and its role in society provides Microsoft's perspective on where AI technology is going and the new societal issues it is raising - ensuring AI is designed and used responsibly, establishing ethical principles to protect people, and how AI will impact employment and jobs. The principles of fairness, reliability and safety, privacy and security, inclusiveness, transparency and accountability are critical to addressing the societal impacts of AI and building trust as AI becomes more and more a part of the products and services that people use at work and at home every day. A central theme in The Future Computed is that for AI to deliver on its potential drive widespread economic and social progress, the technology needs to be human-centered - combining the capabilities of computers with human capabilities to enable people to achieve more. But a human-centered approach can only be realized if researchers, policymakers, and leaders from

government, business and civil society come together to develop a shared ethical framework for AI. This in turn will help foster responsible development of AI systems that will engender trust. Because in an increasingly AI-driven world the question is not what computers can do, it is what computers should do. The Future Computed also draws a few conclusions as we chart our path forward. First, the companies and countries that will fare best in the AI era will be those that embrace these changes rapidly and effectively. Second, while AI will help solve big societal problems, we must look to this future with a critical eye as there will be challenges as well as opportunities. Third, we need to act with a sense of shared responsibility because AI won't be created by the tech sector alone. Finally, skilling-up for an AI-powered world involves more than science, technology, engineering and math. As computers behave more like humans, the social sciences and humanities will become grow in importance.

IoT Security Paradigms and Applications

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. The first ebook in the series, Microsoft Azure Essentials: Fundamentals of Azure, introduces developers and IT professionals to the wide range of capabilities in Azure. The authors - both Microsoft MVPs in Azure - present both conceptual and how-to content for key areas, including: Azure Websites and Azure Cloud Services Azure Virtual Machines Azure Storage Azure

Virtual Networks Databases Azure Active Directory Management tools Business scenarios Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the "Microsoft Azure Essentials" series.

Internet of Things in Biomedical Engineering

Get certified as an Azure architect by acing the 70-535 Architecting Microsoft Solutions (70-535) exam using this comprehensive guide with full coverage of the exam objectives Key Features Learn to successfully design and architect powerful solutions on the Azure Cloud platform Enhance your skills with mock tests and practice questions A detailed certification guide that will help you ace the 70-535 exam with confidence Book Description Architecting Microsoft Azure Solutions: Exam Guide 70-535 will get Azure architects and developers up-to-date with the latest updates on Azure from an architecture and design perspective. The book includes all the topics that are still relevant from the previous 70-534 exam, and is updated with latest topics covered, including Artificial Intelligence, IoT, and architecture styles. This exam guide is divided into six parts, where the first part will give you a good understanding of how to design a compute infrastructure. It also dives into designing networking and data implementations. You will learn about designing solutions for Platform Service and operations. Next, you will be able to secure your resources and data, as well as design a mechanism

for governance and policies. You will also understand the objective of designing solutions for Platform Services, by covering Artificial Intelligence, IoT, media services, and messaging solution concepts. Finally, you will cover the designing for operations objective. This objective covers application and platform monitoring, as well as designing alerting strategies and operations automation strategies. By the end of the book, you'll have met all of the exam objectives, and will have all the information you need to ace the 70-535 exam. You will also have become an expert in designing solutions on Microsoft Azure. What you will learn Use Azure Virtual Machines to design effective VM deployments Implement architecture styles, like serverless computing and microservices Secure your data using different security features and design effective security strategies Design Azure storage solutions using various storage features Create identity management solutions for your applications and resources Architect state-of-the-art solutions using Artificial Intelligence, IoT, and Azure Media Services Use different automation solutions that are incorporated in the Azure platform Who this book is for This book is for architects and experienced developers, who are gearing up for the 70-535 exam. Technical architects interested in learning more about designing Cloud solutions will also find this book useful.

Microsoft Azure Essentials Azure Machine Learning

Internet of Things in Biomedical Engineering presents

the most current research in Internet of Things (IoT) applications for clinical patient monitoring and treatment. The book takes a systems-level approach for both human-factors and the technical aspects of networking, databases and privacy. Sections delve into the latest advances and cutting-edge technologies, starting with an overview of the Internet of Things and biomedical engineering, as well as a focus on 'daily life.' Contributors from various experts then discuss 'computer assisted anthropology,' CLOUDFALL, and image guided surgery, as well as bio-informatics and data mining. This comprehensive coverage of the industry and technology is a perfect resource for students and researchers interested in the topic. Presents recent advances in IoT for biomedical engineering, covering biometrics, bioinformatics, artificial intelligence, computer vision and various network applications Discusses big data and data mining in healthcare and other IoT based biomedical data analysis Includes discussions on a variety of IoT applications and medical information systems Includes case studies and applications, as well as examples on how to automate data analysis with Perl R in IoT

Architecting Microsoft Azure Solutions – Exam Guide 70-535

The term "Internet of Things" (IoT) refers to an ecosystem of interconnected physical objects and devices that are accessible through the Internet and can communicate with each other. The main strength of the IoT vision is the high impact it has created and

will continue to do so on several aspects of the everyday life and behavior of its potential users. This book presents some of the state-of-the-art research work in the field of the IoT, especially on the issues of communication protocols, interoperability of protocols and semantics, trust security and privacy issues, reference architecture design, and standardization. It will be a valuable source of knowledge for researchers, engineers, practitioners, and graduate and doctoral students who are working in various fields of the IoT. It will also be useful for faculty members of graduate schools and universities.

Advanced Intelligent Systems for Sustainable Development (AI2SD'2019)

Start developing Azure Functions and building simple solutions for serverless computing without worrying about infrastructure. With the increased need for deploying serverless computing, Azure Functions integrates with other Azure resources. This book is a quick reference and consists of a practical and problem-driven approach with the latest technology. Guided by step-by-step explanations and sample projects, you'll set up, build, and deploy Azure Functions to get the most out of this compute-on-demand service. After a foundational introduction to Azure Functions you'll prepare a development environment to serve and process an IoT Telemetry system, create Microservices, and monitor Azure Functions services to get application insights. What You'll Learn Review the Interaction between Azure Functions and Azure data services Apply Azure

Functions in web applications and build interaction systems for mobile applications Develop a serverless micro-service Serve and process IoT Telemetry systems Monitor Azure Functions services and get application insights Who This Book Is For Developers, students, professionals and anyone interested in Azure Function technology and the Azure platform.

Microsoft Azure Essentials - Fundamentals of Azure

What is the Internet of Things? It's billions of embedded computers, sensors, and actuators all connected online. If you have basic programming skills, you can use these powerful little devices to create a variety of useful systems—such as a device that waters plants when the soil becomes dry. This hands-on guide shows you how to start building your own fun and fascinating projects. Learn to program embedded devices using the .NET Micro Framework and the Netduino Plus board. Then connect your devices to the Internet with Pachube, a cloud platform for sharing real-time sensor data. All you need is a Netduino Plus, a USB cable, a couple of sensors, an Ethernet connection to the Internet—and your imagination. Develop programs with simple outputs (actuators) and inputs (sensors) Learn about the Internet of Things and the Web of Things Build client programs that push sensor readings from a device to a web service Create server programs that allow you to control a device over the Web Get the .NET classes and methods needed to implement all of the book's examples

Microservices, IoT and Azure

Internet-of-Things (IoT) Analytics are an integral element of most IoT applications, as it provides the means to extract knowledge, drive actuation services and optimize decision making. IoT analytics will be a major contributor to IoT business value in the coming years, as it will enable organizations to process and fully leverage large amounts of IoT data, which are nowadays largely underutilized. The Building Blocks of IoT Analytics is devoted to the presentation the main technology building blocks that comprise advanced IoT analytics systems. It introduces IoT analytics as a special case of BigData analytics and accordingly presents leading edge technologies that can be deployed in order to successfully confront the main challenges of IoT analytics applications. Special emphasis is paid in the presentation of technologies for IoT streaming and semantic interoperability across diverse IoT streams. Furthermore, the role of cloud computing and BigData technologies in IoT analytics are presented, along with practical tools for implementing, deploying and operating non-trivial IoT applications. Along with the main building blocks of IoT analytics systems and applications, the book presents a series of practical applications, which illustrate the use of these technologies in the scope of pragmatic applications. Technical topics discussed in the book include: Cloud Computing and BigData for IoT analyticsSearching the Internet of ThingsDevelopment Tools for IoT Analytics ApplicationsIoT Analytics-as-a-ServiceSemantic Modelling and Reasoning for IoT AnalyticsIoT analytics

for Smart BuildingsIoT analytics for Smart CitiesOperationalization of IoT analyticsEthical aspects of IoT analytics This book contains both research oriented and applied articles on IoT analytics, including several articles reflecting work undertaken in the scope of recent European Commission funded projects in the scope of the FP7 and H2020 programmes. These articles present results of these projects on IoT analytics platforms and applications. Even though several articles have been contributed by different authors, they are structured in a well thought order that facilitates the reader either to follow the evolution of the book or to focus on specific topics depending on his/her background and interest in IoT and IoT analytics technologies. The compilation of these articles in this edited volume has been largely motivated by the close collaboration of the co-authors in the scope of working groups and IoT events organized by the Internet-of-Things Research Cluster (IERC), which is currently a part of EU's Alliance for Internet of Things Innovation (AIOTI).

Internet of Things

This double volume set (LNAI 10863-10864) constitutes the refereed proceedings of the 25th International Workshop, EG-ICE 2018, held in Lausanne, Switzerland, in June 2018. The 58 papers presented in this volume were carefully reviewed and selected from 108 submissions. The papers are organized in topical sections on Advanced Computing in Engineering, Computer Supported Construction

Management, Life-Cycle Design Support, Monitoring and Control Algorithms in Engineering, and BIM and Engineering Ontologies.

Hands-On Azure for Developers

Break down the misconceptions of the Internet of Things by examining the different security building blocks available in Intel Architecture (IA) based IoT platforms. This open access book reviews the threat pyramid, secure boot, chain of trust, and the SW stack leading up to defense-in-depth. The IoT presents unique challenges in implementing security and Intel has both CPU and Isolated Security Engine capabilities to simplify it. This book explores the challenges to secure these devices to make them immune to different threats originating from within and outside the network. The requirements and robustness rules to protect the assets vary greatly and there is no single blanket solution approach to implement security. Demystifying Internet of Things Security provides clarity to industry professionals and provides and overview of different security solutions What You'll Learn Secure devices, immunizing them against different threats originating from inside and outside the networkGather an overview of the different security building blocks available in Intel Architecture (IA) based IoT platformsUnderstand the threat pyramid, secure boot, chain of trust, and the software stack leading up to defense-in-depth Who This Book Is For Strategists, developers, architects, and managers in the embedded and Internet of Things (IoT) space trying to understand and implement the security in

the IoT devices/platforms.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION