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of the given at the end of each chapter, are meant to enable the teacher to test student’s grasping of the subject. This book describes how the creation of new digital services through vertical and horizontal interactions, and innovation from sensors and devices will revolutionize healthcare. The operational and management aspects of the concept of the Internet of Health Things (i.e., Health 4.0), which is based on virtualization and service aggregation. It shows how sensors, embedded systems, and cyber-physical systems are fundamentally changing the way industrial processes work, their business models, and how we consume, while also affecting the health and care domains. Chapters describe the technology behind the shift of point of care to point of need and away from hospitals and institutions, how care will be delivered virtually outside hospitals; that services will be tailored to individual care rather than being designed with statistical averages; that data analytics will be used to help patients to manage their chronic conditions with help of smart devices; and that pharmaceuticals will be interactive to help prevent adverse reactions. The topics presented will have an impact on a variety of healthcare stakeholders in a continuously global and hyper-connected world. Presents explanations of emerging topics as they relate to e-health, such as Industry 4.0, Precision Medicine, Mobile Health (mHealth), Big Data, and Cyber-physical systems. The book has been comprehensively developed to meet the current technological needs. Key features: • New hyperlinks and web references are added in every chapter. • New section on the Internet of Medical Things. • New section on the Internet of Health Things. • New section on the Internet of Smart Communities. "Ethical" refers to the problems of wireless communications including limited bandwidth, rapidly changing radio propagation conditions, mutual interference of radio signals, and vulnerability of systems to eavesdropping and unauthorized access. "Energy" refers to the fact that portable information devices carry their own battery sources. The rate at which the batteries of cellular telephones and portable computers drain their
energy has a strong effect on their utility. This book features selected papers from the International Conference on Soft Computing for Security Applications (ICSCS 2021), held at Dhirajlal Gandhi College of Technology, Tamil Nadu, India, during June 2021. It covers recent advances in the field of soft computing techniques such as fuzzy logic, neural network, support vector machines, evolutionary computation, machine learning and probabilistic reasoning to solve various real-time challenges. The book presents innovative work by leading academics, researchers, and experts from industry. In order to achieve the goal of communication architectures and protocols, which is the interworking of systems, several kinds of test are required: conformance testing, interoperability testing, performance testing and robustness testing. This volume contains contributions from internationally recognized experts working on the theory and practice of protocol testing. In addition to the discussion of important issues in the area, it also offers a review of the state of the art and consideration of trends and directions for the future. The papers cover different approaches, including: formal methods for conformance testing; test generation and coverage; testability and architecture; conformance relations and test derivation; interoperability and nondeterminism; industrial reports and tools. The book will be an essential reference tool for students, engineers, researchers and designers in the field. This book constitutes the thoroughly refereed proceedings of the 4th International Conference on Context-Aware Systems and Applications, ICCASA 2015, held in Vung Tau, Vietnam, in November 2015. The 44 revised full papers presented were carefully selected and reviewed from over 100 submissions. The papers cover a wide spectrum of issues in the area of context-aware systems (CAS) and context-based recommendation systems. CAS is characterized by its self- facets such as self-organization, self-configuration, self-healing, self-optimization, self-protection and so on whose context awareness used to dynamically control computing and networking functions. The overall goal of CAS is to realize nature-inspired autonomic systems that can manage themselves without direct human interventions. Digital transformation (DT) has become a buzzword. Every industry segment across the globe is consciously jumping toward digital innovation and disruption to get ahead of their competitors. In other words, every aspect of running a business is being digitally empowered to reap all the benefits of the digital paradigm. All kinds of digitally enabled businesses across the globe are intrinsically capable of achieving bigger and better things for their constituents. Their consumers, clients, and customers will realize immense benefits with real digital transformation initiatives and implementations. The much-awaited business transformation can be easily and elegantly accomplished with a workable and winnable digital transformation strategy, plan, and execution. There are several enablers and accelerators for realizing the much-discussed digital transformation. There are a lot of digitization and digitalization technologies available to streamline and speed up the process of the required transformation. Industrial Internet of Things (IIoT) technologies in close association with decisive advancements in the artificial intelligence (AI) space can bring forth the desired transitions. The other prominent and dominant technologies toward forming digital organizations include cloud IT, edge/fog computing, real-time data analytics platforms, blockchain technology, digital twin paradigm, virtual and augmented reality (VR/AR) techniques, enterprise mobility, and 5G communication. These technological innovations are intrinsically competent and versatile enough to fulfill the varying requirements for establishing and sustaining digital enterprises. Enterprise Digital Transformation: Technology, Tools, and Use Cases features chapters on the evolving aspects of digital transformation and intelligence. It covers the unique competencies of digitally transformed enterprises, IIoT use cases, and applications. It explains promising technological solutions widely associated with digital innovation and disruption. The book focuses on setting up and sustaining smart factories that are fulfilling the Industry 4.0 vision that is realized through the IIoT and allied technologies.