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Wireless Communications and Networks
Abusing the Internet of Things
Internet of Things: A Hands-On Approach
Technologies and Applications
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Using Web Technologies to Build Connected Devices
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Third International Conference, BDCA 2018, Kenitra, Morocco, April 4–5, 2018, Revised Selected Papers
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A guide to attacking embedded systems and protecting them against the most common hardware attacks
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Intel Galileo and Intel Galileo Gen 2
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Tips & Tools for Making Things with the Inexpensive Linux Computer
Getting Started with the micro:bit
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Generic Programming and Design Patterns Applied
Guide to Computer Forensics and Investigations
Exploring Zynq Mpsoc
Selected Papers from ICITED 2021
CompTIA Network+ N10-007 Exam Cram
Porting, Extending, and Customizing
Mobile Application Penetration Testing
HTTP/2 in Action
Big Data, Cloud and Applications
Hacking Connected Cars
Build Your Own IoT Platform
Embedded Android
Internet of Things with Arduino Cookbook
With Pynq and Machine Learning Applications
Recent Trends and Advances in Wireless and IoT-enabled Networks
API Features and Arduino Projects for Linux Programmers



## GAGE WEBER

**Wireless Communications and Networks** Packt Publishing Ltd
New edition of the bestselling guide to mastering Python Networking, updated to Python 3 and including the latest on network data analysis, Cloud Networking, Ansible 2.8, and new libraries Key Features Explore the power of Python libraries to tackle difficult network problems efficiently and effectively, including pyATS, Nornir, and Ansible 2.8 Use Python and Ansible for DevOps, network device automation, DevOps, and software-defined networking Become an expert in implementing advanced network-related tasks with Python 3 Book Description Networks in your infrastructure set the foundation for how your application can be deployed, maintained, and serviced. Python is the ideal language for network engineers to explore tools that were previously available to systems engineers and application developers. In Mastering Python Networking, Third edition, you'll embark on a Python-based journey to transition from traditional network engineers to network developers ready for the next-generation of networks. This new edition is completely revised and updated to work with Python 3. In addition to new chapters on network data analysis with ELK stack (Elasticsearch, Logstash, Kibana, and Beats) and Azure Cloud Networking, it includes updates on using newer libraries such as pyATS and Nornir, as well as Ansible 2.8. Each chapter is updated with the latest libraries with working examples to ensure compatibility and understanding of the concepts. Starting with a basic overview of Python, the book teaches you how it can interact with both legacy and API-enabled network devices. You will learn to leverage high-level Python packages and frameworks to perform network automation tasks, monitoring, management, and enhanced network security followed by Azure and AWS Cloud networking. Finally, you will use Jenkins for continuous integration as well as testing tools to verify your network. What you will learn Use Python libraries to interact with your network Integrate Ansible 2.8 using Python to control Cisco, Juniper, and Arista network devices Leverage existing Flask web frameworks to construct high-level APIs Learn how to build virtual networks in the AWS & Azure Cloud Learn how to use Elastic Stack for network data analysis Understand how Jenkins can be used to automatically deploy changes in your network Use PyTest and Unittest for Test-Driven Network Development in networking engineering with Python Who this book is for Mastering Python

Networking, Third edition is for network engineers, developers, and SREs who want to use Python for network automation, programmability, and data analysis. Basic familiarity with Python programming and networking-related concepts such as Transmission Control Protocol/Internet Protocol (TCP/IP) will be useful.
Cengage Learning
This book includes original unpublished contributions presented at the International Conference on Data Analytics and Management (ICDAM 2020), held at Jan Wyzykowski University, Poland, during June 2020. The book covers the topics in data analytics, data management, big data, computational intelligence, and communication networks. The book presents innovative work by leading academics, researchers, and experts from industry which is useful for young researchers and students.
Abusing the Internet of Things John Wiley & Sons
This book is for programmers who want to learn about real-time communication and utilize the full potential of WebRTC. It is assumed that you have working knowledge of setting up a basic telecom infrastructure as well as basic programming and scripting knowledge.
**Internet of Things: A Hands-On Approach** Packt Publishing Ltd
This book introduces the Zynq MPSoC (Multi-Processor System-on-Chip), an embedded device from Xilinx. The Zynq MPSoC combines a sophisticated processing system that includes ARM Cortex-A53 applications and ARM Cortex-R5 real-time processors, with FPGA programmable logic. As well as guiding the reader through the architecture of the device, design tools and methods are also covered in detail: both the conventional hardware/software co-design approach, and the newer software-defined methodology using Xilinx's SDx development environment. Featured aspects of Zynq MPSoC design include hardware and software development, multiprocessing, safety, security and platform management, and system booting. There are also special features on PYNQ, the Python-based framework for Zynq devices, and machine learning applications. This book should serve as a useful guide for those working with Zynq MPSoC, and equally as a reference for technical managers wishing to gain familiarity with the device and its associated design methodologies.
*Technologies and Applications* Springer
Leverage the power of Linux to develop captivating and powerful embedded Linux projects About This Book Explore the best practices for all embedded product development stages Learn about the compelling features offered by the Yocto Project, such as customization, virtualization, and many more Minimize project costs by using open source tools and programs Who This Book Is For If you are a developer who wants to build embedded systems using Linux, this book is for you. It is the ideal guide for you if you want to become proficient and broaden your knowledge. A basic understanding of C programming and experience with systems programming is needed. Experienced embedded Yocto developers will find new insight into working methodologies and ARM specific development competence. What You Will Learn Use the Yocto Project in the embedded Linux development process Get familiar with and customize the bootloader for a board Discover more about real-time layer, security, virtualization, CGL, and LSB See development workflows for the U-Boot and the Linux kernel, including debugging and optimization Understand the open source licensing requirements and how to comply with them when cohabiting with proprietary programs Optimize your production systems by reducing the size of both the Linux kernel and root filesystems Understand device trees and make changes to accommodate new hardware on your device Design and write multi-threaded applications using POSIX threads Measure real-time latencies and tune the Linux kernel to minimize them In Detail Embedded Linux is a complete Linux distribution employed to operate embedded devices such as smartphones, tablets, PDAs, set-top boxes, and many more. An example of an embedded Linux distribution is Android, developed by Google. This learning path starts with the module Learning Embedded Linux Using the Yocto Project. It introduces embedded Linux software and hardware architecture and presents information about the bootloader. You will go through Linux kernel features and source code and get an overview of the Yocto Project components available. The next module Embedded Linux Projects Using Yocto Project Cookbook takes you through the installation of a professional embedded Yocto setup, then advises you on best practices. Finally, it explains how to quickly get hands-on with the Freescale ARM ecosystem and community layer using the affordable and open source Wandboard embedded board. Moving ahead, the final module Mastering Embedded Linux Programming takes you through the product cycle and gives you an in-depth description of the components and options that are available at each stage. You will see how functions are split between processes and the usage of POSIX threads. By the end of this learning path, your capabilities will be enhanced to create robust and versatile embedded projects. This Learning Path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following Packt products: Learning Embedded Linux Using the Yocto Project by Alexandru Vaduva Embedded Linux Projects Using Yocto Project Cookbook by Alex Gonzalez Mastering Embedded Linux Programming by Chris Simmonds Style and approach This comprehensive, step-by-step, pragmatic guide enables you to build custom versions of Linux for new embedded systems with examples that are immediately applicable to your embedded developments. Practical examples provide an easy-to-follow way to learn Yocto project development using the best practices and working methodologies. Coupled with hints and best practices, this will help you understand embedded Linux better.
**Smart Computing and Informatics** Springer
Explore embedded systems pentesting by applying the most common attack techniques and patterns Key Features Learn various pentesting tools and techniques to attack and secure your hardware infrastructure Find the glitches in your hardware that can be a possible entry point for attacks Discover best practices for securely designing products Book Description Hardware pentesting involves leveraging hardware interfaces and communication channels to find vulnerabilities in a device. Practical Hardware Pentesting will help you to plan attacks, hack your embedded devices, and secure the hardware infrastructure. Throughout the book, you will see how a specific device works, explore the functional and security aspects, and learn how a system senses and communicates with the outside world. You will start by setting up your lab from scratch and then gradually work with an advanced hardware lab. The book will help you get to grips with the global architecture of an embedded system and sniff on-board traffic. You will also learn how to identify and formalize threats to the embedded system and understand its relationship with its ecosystem. Later, you will discover how to analyze your hardware and locate its possible system vulnerabilities before going on to explore firmware dumping, analysis, and exploitation. Finally, focusing on the reverse engineering process from

an attacker point of view will allow you to understand how devices are attacked, how they are compromised, and how you can harden a device against the most common hardware attack vectors. By the end of this book, you will be well-versed with security best practices and understand how they can be implemented to secure your hardware. What you will learn Perform an embedded system test and identify security critical functionalities Locate critical security components and buses and learn how to attack them Discover how to dump and modify stored information Understand and exploit the relationship between the firmware and hardware Identify and attack the security functions supported by the functional blocks of the device Develop an attack lab to support advanced device analysis and attacks Who this book is for This book is for security professionals and researchers who want to get started with hardware security assessment but don't know where to start. Electrical engineers who want to understand how their devices can be attacked and how to protect against these attacks will also find this book useful.

**Using Web Technologies to Build Connected Devices** John Wiley & Sons
This book presents high-quality, peer-reviewed papers from the International Conference in Information Technology & Education (ICITED 2021), to be held at the ESPM – Higher School of Advertising and Marketing, Sao Paulo, Brazil, between the 15th and the 17th of July 2021. The book covers a specific field of knowledge. This intends to cover not only two fields of knowledge – Education and Technology – but also the interaction among them and the impact/result in the job market and organizations. It covers the research and pedagogic component of Education and Information Technologies but also the connection with society, addressing the three pillars of higher education. The book addresses impact of pandemic on education and use of technology in education. Finally, it also encourages companies to present their professional cases which is discussed. These can constitute real examples of how companies are overcoming their challenges with the uncertainty of the market.

**Proceedings of ICDAM** Springer Nature
This book constitutes the thoroughly refereed proceedings of the Third International Conference on Big Data, Cloud and Applications, BDCA 2018, held in Kenitra, Morocco, in April 2018.The 45 revised full papers presented in this book were carefully selected from 99 submissions with a thorough double-blind review process. They focus on the following topics: big data, cloud computing, machine learning, deep learning, data analysis, neural networks, information system and social media, image processing and applications, and natural language processing.

*Modern Embedded Computing* Elsevier
A computer forensics "how-to" for fighting malicious code andanalyzing incidents With our ever-increasing reliance on computers comes anever-growing risk of malware. Security professionals will findplenty of solutions in this book to the problems posed by viruses,Trojan horses, worms, spyware, rootkits, adware, and other invasivesoftware. Written by well-known malware experts, this guide revealssolutions to numerous problems and includes a DVD of customprograms and tools that illustrate the concepts, enhancing yourskills. Security professionals face a constant battle against malicioussoftware; this practical manual will improve your analyticalcapabilities and provide dozens of valuable and innovativesolutions Covers classifying malware, packing and unpacking, dynamicmalware analysis, decoding and decrypting, rootkit detection,memory forensics, open source malware research, and much more Includes generous amounts of source code in C, Python, and Perlto extend your favorite tools or build new ones, and customprograms on the DVD to demonstrate the solutions Malware Analyst's Cookbook is indispensible to ITsecurity administrators, incident responders, forensic analysts,and malware researchers.

**Practical Hardware Pentesting** Springer Nature
A Remote Monitoring and Diagnosis Method Based on Four-Layer IoT Frame PerceptionInfinite Study

Internet of Things A to Z Packt Publishing Ltd
How can we build bridges from the digital world of the Internet to the analog world that surrounds us? By bringing accessibility to embedded components such as sensors and microcontrollers, JavaScript and Node.js might shape the world of physical computing as they did for web browsers. This practical guide shows hardware and software engineers, makers, and web developers how to talk in JavaScript with a variety of hardware platforms. Authors Patrick Mulder and Kelsey Breseman also delve into the basics of microcontrollers, single-board computers, and other hardware components. Use JavaScript to program microcontrollers with Arduino and Espruino Prototype IoT devices with the Tessel 2 development platform Learn about electronic input and output components, including sensors Connect microcontrollers to the Internet with the Particle Photon toolchain Run Node.js on single-board computers such as Raspberry Pi and Intel Edison Talk to embedded devices with Node.js libraries such as Johnny-Five, and remotely control the devices with Bluetooth Use MQTT as a message broker to connect devices across networks Explore ways to use robots as building blocks for shared experiences

**Third International Conference, BDCA 2018, Kenitra, Morocco, April 4–5, 2018, Revised Selected Papers** Simon and Schuster
Modern embedded systems are used for connected, media-rich, and highly integrated handheld devices such as mobile phones, digital cameras, and MP3 players. All of these embedded systems require networking, graphic user interfaces, and integration with PCs, as opposed to traditional embedded processors that can perform only limited functions for industrial applications. While most books focus on these controllers, Modern Embedded Computing provides a thorough understanding of the platform architecture of modern embedded computing systems that drive mobile devices. The book offers a comprehensive view of developing a framework for embedded systems-on-chips. Examples feature the Intel Atom processor, which is used in high-end mobile devices such as e-readers, Internet-enabled TVs, tablets, and net books. Beginning with a discussion of embedded platform architecture and Intel Atom-specific architecture, modular chapters cover system boot-up, operating systems, power optimization, graphics and multi-media, connectivity, and platform tuning. Companion lab materials compliment the chapters, offering hands-on embedded design experience. Learn embedded systems design with the Intel Atom Processor, based on the dominant PC chip architecture. Examples use Atom and offer comparisons to other platforms Design embedded processors for systems that support gaming, in-vehicle infotainment, medical records retrieval, point-of-sale purchasing, networking, digital storage, and many more retail, consumer and industrial applications Explore companion lab materials online that offer hands-on embedded design experience

BeagleBone Robotic Projects Packt Publishing Ltd
This book features high-quality papers presented at the International Conference

on Computational Intelligence and Communication Technology (CICT 2019) organized by ABES Engineering College, Ghaziabad, India, and held from February 22 to 23, 2019. It includes the latest advances and research findings in fields of computational science and communication such as communication & networking, web & informatics, hardware and software designs, distributed & parallel processing, advanced software engineering, advanced database management systems and bioinformatics. As such, it is of interest to research scholars, students, and engineers around the globe.

**A guide to attacking embedded systems and protecting them against the most common hardware attacks** John Wiley & Sons

A comprehensive overview of the Internet of Things' core concepts, technologies, and applications Internet of Things A to Z offers a holistic approach to the Internet of Things (IoT) model. The Internet of Things refers to uniquely identifiable objects and their virtual representations in an Internet-like structure. Recently, there has been a rapid growth in research on IoT communications and networks, that confirms the scalability and broad reach of the core concepts. With contributions from a panel of international experts, the text offers insight into the ideas, technologies, and applications of this subject. The authors discuss recent developments in the field and the most current and emerging trends in IoT. In addition, the text is filled with examples of innovative applications and real-world case studies. Internet of Things A to Z fills the need for an up-to-date volume on the topic. This important book: Covers in great detail the core concepts, enabling technologies, and implications of the Internet of Things Addresses the business, social, and legal aspects of the Internet of Things Explores the critical topic of security and privacy challenges for both individuals and organizations Includes a discussion of advanced topics such as the need for standards and interoperability Contains contributions from an international group of experts in academia, industry, and research Written for ICT researchers, industry professionals, and lifetime IT learners as well as academics and students, Internet of Things A to Z provides a much-needed and comprehensive resource to this burgeoning field.

**Coding and Making with the BBC's Open Development Board** Apress

Learn practical uses for some of the hottest tech applications trending among technology professionals We are living in an era of digital revolution. On the horizon, many emerging digital technologies are being developed at a breathtaking speed. Whether we like it or not, whether we are ready or not, digital technologies are going to penetrate more and more, deeper and deeper, into every aspect of our lives. This is going to fundamentally change how we live, how we work, and how we socialize. Java, as a modern high-level programming language, is an excellent tool for helping us to learn these digital technologies, as well as to develop digital applications, such as IoT, AI, Cybersecurity, Blockchain and more. Practical Java Programming uses Java as a tool to help you learn these new digital technologies and to be better prepared for the future changes. Gives you a brief overview for getting started with Java Programming Dives into how you can apply your new knowledge to some of the biggest trending applications today Helps you understand how to program Java to interact with operating systems, networking, and mobile applications Shows you how Java can be used in trending tech applications such as IoT (Internet of Things), AI (Artificial Intelligence), Cybersecurity, and Blockchain Get ready to find out firsthand how Java can be used for connected home devices, healthcare, the cloud, and all the hottest tech applications.

*Linux: Embedded Development* Pearson IT Certification

This volume contains 68 papers presented at SCI 2016: First International Conference on Smart Computing and Informatics. The conference was held during 3-4 March 2017, Visakhapatnam, India and organized communally by ANITS, Visakhapatnam and supported technically by CSI Division V – Education and Research and PRF, Vizag. This volume contains papers mainly focused on smart computing for cloud storage, data mining and software analysis, and image processing.

*Mobile Terminal Receiver Design* Infinite Study

Prepare for CompTIA Network+ N10-007 exam success with this CompTIA approved Exam Cram from Pearson IT Certification, a leader in IT Certification learning and a CompTIA Authorized Platinum Partner. This is the eBook version of the print title. Note that the eBook may not provide access to the practice test software that accompanies the print book. Access to the digital edition of the Cram Sheet is available through product registration at Pearson IT Certification; or see the instructions in the back pages of your eBook. CompTIA® Network+ N10- 007 Exam Cram, Sixth Edition is the perfect study guide to help you pass CompTIA's Network+ N10-007 exam. It provides coverage and practice questions for every exam topic, including substantial new coverage of security, cloud networking, IPv6, and wireless technologies. The book presents you with an organized test-preparation routine through the use of proven series elements and techniques. Exam topic lists make referencing easy. Exam Alerts, Sidebars, and Notes interspersed throughout the text keep you focused on what you need to know. Cram Quizzes help you assess your knowledge, and the Cram Sheet tear card is the perfect last-minute review. Covers the critical information you'll need to know to score higher on your CompTIA Network+ (N10-007) exam! · Understand modern network topologies, protocols, and infrastructure · Implement networks based on specific requirements · Install and configure DNS and DHCP · Monitor and analyze network traffic · Understand IPv6 and IPv4 addressing, routing, and switching · Perform basic router/switch installation and configuration · Explain network device functions in cloud environments · Efficiently implement and troubleshoot WANs · Install, configure, secure, and troubleshoot wireless networks · Apply patches/updates, and support change/configuration management · Describe unified communication technologies · Segment and optimize networks · Identify risks/threats, enforce policies and physical security, configure firewalls, and control access · Understand essential network forensics concepts · Troubleshoot routers, switches, wiring, connectivity, and security

Building a Pentesting Lab for Wireless Networks Packt Publishing Ltd

Build your own secure enterprise or home penetration testing lab to dig into the various hacking techniques About This Book Design and build an extendable penetration testing lab with wireless access suitable for home and enterprise use Fill the lab with various components and customize them according to your own needs and skill level Secure your lab from unauthorized access and external attacks Who This Book Is For If you are a beginner or a security professional who wishes to learn to build a home or enterprise lab environment where you can safely practice penetration testing techniques and improve your hacking skills, then this book is for you. No prior penetration testing experience is required, as the lab environment is suitable for various skill levels and is used for a wide range of techniques from basic to advance. Whether you are brand new to online learning or you are a seasoned

expert, you will be able to set up your own hacking playground depending on your tasks. What You Will Learn Determine your needs and choose the appropriate lab components for them Build a virtual or hardware lab network Imitate an enterprise network and prepare intentionally vulnerable software and services Secure wired and wireless access to your lab Choose a penetration testing framework according to your needs Arm your own wireless hacking platform Get to know the methods to create a strong defense mechanism for your system In Detail Starting with the basics of wireless networking and its associated risks, we will guide you through the stages of creating a penetration testing lab with wireless access and preparing your wireless penetration testing machine. This book will guide you through configuring hardware and virtual network devices, filling the lab network with applications and security solutions, and making it look and work like a real enterprise network. The resulting lab protected with WPA-Enterprise will let you practice most of the attack techniques used in penetration testing projects. Along with a review of penetration testing frameworks, this book is also a detailed manual on preparing a platform for wireless penetration testing. By the end of this book, you will be at the point when you can practice, and research without worrying about your lab environment for every task. Style and approach This is an easy-to-follow guide full of hands-on examples and recipes. Each topic is explained thoroughly and supplies you with the necessary configuration settings. You can pick the recipes you want to follow depending on the task you need to perform.

**Intel Galileo and Intel Galileo Gen 2**

McGraw Hill Education (India) Pvt Ltd

Internet of Things (IoT) refers to physical and virtual objects that have unique identities and are connected to the internet to facilitate intelligent applications that make energy, logistics, industrial control, retail, agriculture and many other domains "smarter". Internet of Things is a new revolution of the Internet that is rapidly gathering momentum driven by the advancements in sensor networks, mobile devices, wireless communications, networking and cloud technologies. Experts forecast that by the year 2020 there will be a total of 50 billion devices/things connected to the internet. This book is written as a textbook on Internet of Things for educational programs at colleges and universities, and also for IoT vendors and service providers who may be interested in offering a broader perspective of Internet of Things to accompany their own customer and developer training programs. The typical reader is expected to have completed a couple of courses in programming using traditional high-level languages at the college-level, and is either a senior or a beginning graduate student in one of the science, technology, engineering or mathematics (STEM) fields. Like our companion book on Cloud Computing, we have tried to write a comprehensive book that transfers knowledge through an immersive "hands on" approach, where the reader is provided the necessary guidance and knowledge to develop working code for real-world IoT applications. Additional support is available at the book's website: www.internet-of-things-book.com Organization The book is organized into 3 main parts, comprising of a total of 11 chapters. Part I covers the building blocks of Internet of Things (IoTs) and their characteristics. A taxonomy of IoT systems is proposed comprising of various IoT levels with increasing levels of complexity. Domain specific Internet of Things and their real-world applications are described. A generic design methodology for IoT is proposed. An IoT system management approach using NETCONF-YANG is described. Part II introduces the reader to the programming aspects of Internet of Things with a view towards rapid prototyping of complex IoT applications. We chose Python as the primary programming language for this book, and an introduction to Python is also included within the text to bring readers to a common level of expertise. We describe packages, frameworks and cloud services including the WAMP-AutoBahn, Xively cloud and Amazon Web Services which can be used for developing IoT systems. We chose the Raspberry Pi device for the examples in this book. Reference architectures for different levels of IoT applications are examined in detail. Case studies with complete source code for various IoT domains including home automation, smart environment, smart cities, logistics, retail, smart energy, smart agriculture, industrial control and smart health, are described. Part III introduces the reader to advanced topics on IoT including IoT data analytics and Tools for IoT. Case studies on collecting and analyzing data generated by Internet of Things in the cloud are described.

*Malware Analyst's Cookbook and DVD*

Packt Publishing Ltd

The micro:bit, a tiny computer being distributed by the BBC to students all over the UK, is now available for anyone to purchase and play with. Its small size and low power requirements make it an ideal project platform for hobbyists and makers. You don't have to be limited by the web-based programming solutions, however: the hardware on the board is deceptively powerful, and this book will teach you how to really harness the power of the micro:bit. You'll learn about sensors, Bluetooth communications, and embedded operating systems, and along the way you'll develop an understanding of the next big thing in computers: the Internet of Things.