1. Record Nr. UNINA9910595598003321

Autore	Fattahi Ahmad
Titolo	IoT Product Design and Development : Best Practices for Industrial, Consumer, and Business Applications
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2022 ©2022
ISBN	1-119-78768-8 1-119-78766-1 1-119-78767-X
Descrizione fisica	1 online resource (200 pages)
Collana	IoT Skills in Practice Ser.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Acknowledgments -- Preface -- Chapter 1 Introduction to IoT -- WHAT IS IoT? -- WHY IS IoT IMPORTANT? -- WHY NOW? -- Chapter 2 IoT and Digital Transformation -- THE ROLE OF IoT IN MODERN BUSINESSES -- Opportunities -- Risks -- IT'S AN INTEGRATION PROCESS: THE HUMAN ASPECTS OF DIGITAL TRANSFORMATION -- IT-OT Integration -- Building Trust Is Key -- Chapter 3 Business Models and Market Analysis -- BUSINESS AND INDUSTRIAL MARKET -- The Shift to Software-Based PLCS -- Example: Improve Cost and Reliability of a Power Distribution System with IoT -- Example: Enhance Safety, Security, and Carbon Footprint in an Airport Using IoT -- CONSUMER MARKET -- Sources of Cost -- Sources of Revenue -- Matter, Formerly Known as Project Connected Home Over IP (CHIP) -- Example: Improve Quality of Life and Energy Efficiency by Smart Thermostats -- CONNECTIVITY CHOICE AND ITS IMPACT ON ROI -- CLIMATE CHANGE AND PERFORMANCE PER WATT -- DATA BY-PRODUCTS BEYOND THE ORIGINAL IoT APPLICATION -- Services and Device Management -- Peripheral Businesses -- Marketing -- Data Management -- Analytics and AI -- Developers -- Security and Safety -- Chapter 4 Security -- ENCRYPTION TECHNIQUES -- Symmetric Encryption Algorithms -- Asymmetric Encryption Algorithms -- SOFTWARE AND FIRMWARE UPDATE TECHNIQUES --

Random Key Generation -- Software and Firmware Update Process -- KEY MANAGEMENT AND PROTECTION AGAINST KNOWN THREATS -- SECURITY ATTACKS AND CHAIN OF TRUST -- Security Attacks -- Chain of Trust -- Incident Response -- BLOCKCHAIN -- SUMMARY OF BEST SECURITY PRACTICES FOR IoT SYSTEMS -- NETWORKING CONCEPTS -- Proxy -- VPN -- Firewall -- DMZ -- IoT SECURITY STANDARDS AND CERTIFICATES -- ioXT -- UL -- Matter, Formerly Known as Project Home over IP (CHIP) -- Governmental Regulations and Other General Guidelines.
Chapter 5 IoT System Design Process and Main Components -- DESIGN AND DEPLOYMENT PROCESS -- Roles, Responsibilities, and Team Structure -- Process - A Deeper Look -- SENSORS -- Common Sensors -- General Sensor Concepts -- Filtering the Sensor Output -- FILE SYSTEMS -- Data in Motion versus Data at Rest -- MACHINE LEARNING -- History and Background -- Categories of Learning Algorithms -- General Machine Learning Concepts -- How a Machine Learning Model Is Built -- Overfitting -- Data Set, Explainability, and Supervised Concepts -- What Is and What Is Not Machine Learning? -- Machine Learning Architecture -- NETWORKING AND COMMUNICATION SYSTEM, PRODUCT LIFECYCLE, DEVICE MANAGEMENT -- IoT System Architecture: Edge, Cloud, and Fog -- Networking -- WIRELESS COMMUNICATION PROTOCOLS -- Short-Range Wireless Protocols -- Long-Range Wireless Protocols -- EXAMPLES -- Smart Video Doorbell -- Energy-Efficient Office -- IoT SYSTEMS LIFECYCLE -- Chapter 6 The Process of Building a Data Product -- WHAT PERSONAS DO YOU NEED ON YOUR TEAM? -- BUSINESS UNDERSTANDING -- DATA UNDERSTANDING -- DATA PREPARATION -- MODELING -- EVALUATION -- DEPLOYMENT -- THE CYCLE REPEATS - CRISP-DM -- Chapter 7 Concluding Remarks -- Further Reading -- Index -- EULA.