Esp8266 Programming Nodemcu Using Arduino Ide Get Started With Esp8266 Internet Of Things Iot Projects In Internet Of Things Internet Of Things For Beginners Nodemcu Programming Esp8266

A Hands-On Course in Sensors using the Arduino and Raspberry Pi is the first book to give a practical and wide-ranging account of how to interface sensors and actuators with micro-controllers, Raspberry Pi and other control systems. The author describes the progression of raw signals through conditioning stages, digitization, data storage and presentation. The collection, processing, and understanding of sensor data plays a central role in industrial and scientific activities. This book builds simplified models of large industrial or scientific installations that contain hardware and other building blocks, including services for databases, web servers, control systems, and messaging brokers. A range of case studies are included within the book, including a weather station, geophones, a water-colour monitor, capacitance measurement, the profile of laser beam, and a remote-controlled and fire-seeking robot This book is suitable for advanced undergraduate and graduate students taking hands-on laboratory courses in physics and engineering. Hobbyists in robotics clubs and other enthusiasts will also find this book of interest. Features: Includes practical, hands-on exercises that can be conducted in student labs, or even at home Covers the latest software and hardware, and all code featured in examples is discussed in detail All steps are illustrated with practical examples and case studies to enhance learning

If you are a hobbyist who wants to develop projects based on Arduino as the main microcontroller platform or an engineer interested in finding out what the Arduino platform offers, then this book is ideal for you. Some prior knowledge of the C programming language is required.

Exploring the low cost WiFi module About This Book Leverage the ESP8266's on-board processing and storage capability Get hand- on experience of working on the ESP8266 Arduino Core and its various libraries A practical and enticing recipe-based book that will teach you how to make your environment smart using the ESP8266 Who This Book Is For This book is targeted at IOT enthusiasts who are well versed with electronics concepts and have a very basic familiarity with the ESP8266. Some experience with programming will be an advantage. What You Will Learn Measure data from a digital temperature and humidity sensor using the ESP8266 Explore advanced ESP8266 functionalities Control devices from anywhere in the world using MicroPython Troubleshoot issues with cloud data monitoring Tweet data from the Arduino board Build a cloud-connected power-switch with the ESP8266 Create an ESP8266 robot controlled from the cloud In Detail The ESP8266 Wi-Fi Module is a self contained System on Chip (SOC) with an integrated TCP/IP protocol stack and can give any microcontroller access to your Wi-Fi network. It is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor. This book contains practical recipes that will help you master all ESP8266 functionalities. You will start by configuring and customizing the chip in line with your requirements. Then you will focus on core topics such as on-board processing, sensors, GPIOs, programming, networking, integration with external components, and so on. We will also teach you how to leverage Arduino using

the ESP8266 and you'll learn about its libraries, file system, OTA updates, and so on. The book also provide recipes on web servers, testing, connecting with the cloud, and troubleshooting techniques. Programming aspects include MicroPython and how to leverage it to get started with the ESP8266. Towards the end, we will use these concepts and create an interesting project (IOT). By the end of the book, readers will be proficient enough to use the ESP8266 board efficiently. Style and approach This recipe-based book will teach you to build projects using the ESP8266.

Super book for becoming super hero in Internet of Things world. It takes you from zero to become master in ESP8266 programming using Arduino IDE. IoT is recent trend in market you can built anything with help of this book, covers from basics to advance level. Includes getting data to VB.net, drawing graphs, using google gadgets to show gauges, hardware design aspects and much more.

Handbook of IoT and Big Data

The Internet of Things Using NODEMCU

You Can Make It

The Inernet of Things with Esp8266 Hands on Approach

Get started with Internet of things with ESP8266 and Arduino IDE

Select Proceedings of TMSF 2019

Build and control autonomous robots using Raspberry Pi 3 and Python

This book helps you to get started with Arduino Sketch development using ESP8266 boards. We explore I/O programming on ESP8266 boards. The following is a list of highlight topics in this book: * Preparing Development Environment * Setting Up ESP8266 Boards * GPIO Programming * Working with Serial Communication (UART) * PWM and Analog Input * Working with I2C * Working with SPI * Connecting to a Network * Working with EEPROM * Reading Temperature and Humidity with DHT Module

ESP8266 started their journey out as a WiFi add-on board for more traditional Arduino boards but shortly after, the community realized the power of them and added support to be able to program directly with the Arduino IDE. This book will give you: Simple Ways Of Programming An ESP8266: How To Program ESP8266 With Arduino ESP8266 Programming Tutorial: Programming With Arduino ESP8266 Programming Language: Nodemcu Programming, ESP8266 For Beginners

This book provides knowledge, skills, and strategies an engineer requires to effectively integrate Internet of Things (IoT) into the field of mechanical engineering. Divided into three sections named IoT Strategies, IoT Foundation topics, and IoT system development, the volume covers introduction to IoT framework, its components, advantages, challenges, and practical process for effective implementation of IoT from mechanical engineering perspective. Further, it explains IoT systems and hands-on training modules, implementation, and execution of IoT Systems. Features: Presents exclusive material on application of IoT in mechanical engineering. Combines theory and practice including relevant terminologies and hands-on. Emphasis on use of IoT to streamline operations, reduce costs, and increased

profits. Focusses on development and implementation of Raspberry Pi and Arduino based IoT systems. Illustrates use IoT data to improve performance of robots, machines, and systems. This book aims at Researchers, Graduate students in Mechanical Engineering, Computer Programming, Automobile, Robotics, and Industry 4.0/automation.

Leverage the WiFi chip to build exciting Quadcopters Key Features Learn to create a fully functional Drone with Arduino and ESP8266 and their modified versions of hardware. Enhance your drone's functionalities by implementing smart features. A project-based guide that will get you developing next-level drones to help you monitor a particular area with mobile-like devices. Book Description With the use of drones, DIY projects have taken off. Programmers are rapidly moving from traditional application programming to developing exciting multi-utility projects. This book will teach you to build industry-level drones with Arduino and ESP8266 and their modified versions of hardware. With this book, you will explore techniques for leveraging the tiny WiFi chip to enhance your drone and control it over a mobile phone. This book will start with teaching you how to solve problems while building your own WiFi controlled Arduino based drone. You will also learn how to build a Quadcopter and a mission critical drone. Moving on you will learn how to build a prototype drone that will be given a mission to complete which it will do it itself. You will also learn to build various exciting projects such as gliding and racing drones. By the end of this book you will learn how to maintain and troubleshoot your drone. By the end of this book, you will have learned to build drones using ESP8266 and Arduino and leverage their functionalities to the fullest. What you will learn Includes a number of projects that utilize different ESP8266 and Arduino capabilities, while interfacing with external hardware Covers electrical engineering and programming concepts, interfacing with the World through analog and digital sensors, communicating with a computer and other devices, and internet connectivity Control and fly your quadcopter, taking into account weather conditions Build a drone that can follow the user wherever he/she goes Build a mission-control drone and learn how to use it effectively Maintain your vehicle as much as possible and repair it whenever required Who this book is for If you are a programmer or a DIY enthusiast and keen to create a fully functional drone with Arduino and ESP8266, then this book is for you. Basic skills in electronics and programming would be beneficial. This book is not for the beginners as it includes lots of ideas not detailed how you can do that. If you are a beginner, then you might get lost here. The prerequisites of the book include a good knowledge of Arduino, electronics, programming in C or C++ and lots of interest in creating things out of nothing.

How To Program ESP8266 With Arduino: Esp8266 Programming Tutorial

ESP8266 Robotics Projects

Arduino Sketch for ESP8266 Development Workshop

Esp32 Programming for the Internet of Things

WICSTH 2021

Internet of Things in Automotive Industries and Road Safety

Learn Robotics Programming

The book introduces the reader to the Node MCU board, which is a low-cost development board for designing IoT applications.

This book presents selected papers from the International Conference on Computing, Communication, Electrical and Biomedical Systems (ICCCEBS 2021), held in March 2021 at KPR College of Engineering and Technology, Coimbatore, Tamil Nadu, India. The conference explores the interface between industry and real-time environments with newly developed techniques in computing and communications engineering. The papers describe results of conceptual, constructive, empirical, experimental, and theoretical work in areas of computing, communication, electrical, and biomedical systems. Contributors include academic scientists, researchers, industry representatives, postdoctoral fellows, and research scholars from around the world. Presents proceedings of the International Conference on Computing, Communication, Electrical and Biomedical Systems Includes topics such as blockchain, cognitive computing, affective computing, machine learning, and mining platforms Provides a platform for researchers, practitioners, and educators to discuss trends across engineering and computing.

This book presents high-quality, original contributions (both theoretical and experimental) on software engineering, cloud computing, computer networks & internet technologies, artificial intelligence, information security, and database and distributed computing. It gathers papers presented at ICRIC 2019, the 2nd International Conference on Recent Innovations in Computing, which was held in Jammu, India, in March 2019. This conference series represents a targeted response to the growing need for research that reports on and assesses the practical implications of IoT and network technologies, AI and machine learning, cloud-based e-Learning and big data, security and privacy, image processing and computer vision, and next-generation computing technologies.

NodeMCU is the Development Kit based on ESP8266 with NodeMCU firmware. This book helps you to get started with NodeMCU v2 development. The following is highlight topic in this book: * Preparing Development Environment * Setting up NodeMCU * Lua Programming Language * GPIO Programming * PWM and Analog Input * Working with I2C * UART * SPI * Working with OLED Display * Connecting to a Network

Getting Start with ESP8266 (iot Hands on Projects)

Applications in Ubiquitous Computing

A Hands-On Course in Sensors Using the Arduino and Raspberry Pi

Recent Innovations in Computing

DIY Wi-Fi controlled robots

Online Engineering & Internet of Things

ESP8266 Programming Tutorial

The two-volume set LNAI 11288 and 11289 constitutes the proceedings of the 17th Mexican International Conference on Artificial Intelligence, MICAI 2018, held in Guadalajara, Mexico, in October 2018. The total of 62 papers presented in these two volumes was carefully reviewed and selected from 149 submissions. The contributions are organized in topical as follows: Part I: evolutionary and nature-inspired intelligence; machine learning; fuzzy logic and uncertainty management. Part II: knowledge representation, reasoning, and optimization; natural language processing; and robotics and computer vision.

This book gives insides of electrical and physical parameter measurements using arduino such as AC current, Frequency, pH, Liquid Level, flow, Air pressure and many more. The book layout is kept very simple like experiment notes 1. Discuss the measurement parameter 2. Sensor description 3. Circuit and its calculation 4. Circuit design 5. Programming 6. Results.

This book is all about getting started with Internet of Things using Nodemcu, it's a development kit made out of ESP8266, which is very cheap Wi-Fi microcontroller, and in this book you can find How to program the Nodemcu from Arduino IDE You will learn in-depth details about ESP8266 Chip, Modules, Features & Benefits. This book will help you understand the basic concepts of IOT, its benefits, advantages and applications in various industries starting from Home Automation to Healthcare Monitoring to Industrial Transformation. what are you still waiting for? Go ahead and enjoy the IOT ride with Nodemcu ...This book will teach you programming NodeMCU using Arduino IDE. If you want to learn about the world of IOT and how it changes the world we live in, this is a resource book to get started with. TABLE OF CONTENT:1. INTRODUCTION TO ARDUINO2. BASICS OF ELECTRONICS3. ARDUINO DEVELOPMENT KIT4. ARDUINO COMPONTENT 1.LED 2.Temperature 3.Push Button 4.Potentiometer 5.Servo Motor 6.DC Motor 5. NodeMCU ON ARDUINO IDE 1. Analog Input 2. Analog Output 3. Serial Monitor 4. Switching Using Transistor 5. i2c Scanner 6. Piezo Buzzer 7. 7 Segment Display 8. RGB Led 9. Weather Station 10. Connecting to Internet 11. LED Control from Web Server 12. Getting Mac Address

Build your own Internet of Things (IoT) projects for prototyping and proof-of-concept purposes. This book contains the tools needed to build a prototype of your design, sense the environment, communicate with the Internet (over the Internet and Machine to Machine communications) and display the results. Raspberry Pi IoT Projects provides several IoT projects and designs are shown from the start to the finish including an IoT Heartbeat Monitor, an IoT Swarm, IoT Solar Powered Weather Station, an IoT iBeacon Application and a RFID (Radio Frequency Identification) IoT Inventory Tracking System. The software is presented as reusable libraries, primarily in Python and C with full source code available. Raspberry Pi IoT Projects: Prototyping Experiments for Makers is also a valuable learning resource for classrooms and learning labs. What You'll Learn build IOT projects with the Raspberry Pi Talk to sensors with the Raspberry Pi Use iBeacons with the IOT Raspberry Pi Communicate your IOT data to the Internet Build security into your IOT device Who This Book Is For Primary audience are those with some technical background, but not necessarily

engineers. It will also appeal to technical people wanting to learn about the Raspberry Pi in a project-oriented method.

Select Proceedings of ICAMMM 2021

Kick-Start to MicroPython using ESP32 / ESP8266

Electronics and Microprocessing for Research, 2nd Edition

Proceedings of the 1st Warmadewa International Conference on Science, Technology and Humanity, WICSTH 2021, 7-8 September 2021, Denpasar, Bali, Indonesia

ESP8266 Internet of Things Cookbook

ESP8266 NodeMCU Using Arduino IDE (Internet of Things)

NodeMCU Development Workshop

This book is specially described about best IOT Projects with the simple explanation .From this book you can get lots of information about the IOT and How the Projects are developed. You can get an information about the free cloud services and effective way to apply in your projects. you can get how to program and create a proper automation in IOT products, Which is helpful for the starting stage people but they must know about internet of things....You will know how to process the microchip controller and new software for working ...From this you can get lot of new ideas ...why are u waiting for ? and get it my friend .... we really proud to present this book for u ...Thank u .....

Getting Started for Internet of Things with Launch Pad and ESP8266 provides a platform to get started with the Ti launch pad and IoT modules for Internet of Things applications. The book provides the basic knowledge of Ti launch Pad and ESP8266 based customized modules with their interfacing, along with the programming.The book discusses the application of Internet of Things in different areas. Several examples for rapid prototyping are included, this to make the readers understand the concept of IoT.The book comprises of twenty-seven chapters, which are divided into four sections and which focus on the design of various independent prototypes. Section-A gives a brief introduction to Ti launch pad (MSP430) and Internet of Things platforms like GPRS, NodeMCU and NuttyFi (ESP8266 customized board), and it shows steps to program these boards. Examples on how to interface these boards with display units, analog sensors, digital sensors and actuators are also included, this to make reader comfortable with the platforms. Section-B discusses the communication modes to relay the data like serial out, PWM and I2C. Section-C explores the IoT data loggers and shows certain steps to design and interact with the servers. Section-D includes few IoT based case studies in various fields. This book is based on the practical

experience of the authors while undergoing projects with students and partners from various industries.
Get Started with the Internet Of Things! Learn how to use the ESP8266 WiFi chip to build Internet of Things (IoT) projects! This book will teach you programming NodeMCU using Arduino IDE. If you want to learn about the world of IOT and how it changes the world we live in, this is a resource book to get started with. You will learn indepth details about ESP8266 Chip, Modules, Features & Benefits. This book will help you understand the basic concepts of IOT, its benefits, advantages and applications in various industries starting from Home Automation to Healthcare Monitoring to Industrial Transformation. What You'll Learn From This Book: Chapter 1: Introduction To Programming with NodeMCU using Arduino IDEChapter 2: Moving Toward A Smarter Internet - The Internet Of ThingsChapter 3: Getting Started With Esp8266* The Chip* The ModulesChapter 4: ESP8266 - Chip, Modules & Features* Understanding IOT* Designing an Internet of Things Solution * System & Application Requirements* Overcoming Limitations Using ESP8266* Features of ESP8266Chapter 5: Understanding NodeMCUChapter 6: Getting Started With NodeMCU* The 3 Ways To Program NodeMCUChapter 7: Role of ESP8266 and NodeMCU in IOTChapter 8: Programming NodeMCU * Hardware Requirements* Software RequirementsChapter 9: Step-by-Step Guide To Programming NodeMCUChapter 10: Creating Your 1st ProjectChapter 11: Creating Your 2nd ProjectChapter 12: Conclusion - Sculpting Your Career In IOT* How do YOU become an expert on IoT - Internet of Things?* The Internet Of Things Wants You* 10 New Jobs Created By The Internet Of ThingsUsing this step by step guide book, you will learn the complete details about ESP8266, you will understand NodeMCU, the three different ways to programming NodeMCU, you will also learn to program NodeMCU using Arduino IDE. There are 2 different Projects given in this book so you can get started with your own IOT projects!

This book is all about getting started with Internet of Things using Nodemcu, it's a development kit made out of ESP8266, which is very cheap Wi-Fi microcontroller, and in this book you can find How to program the Nodemcu from Arduino IDE This book will teach you how to start with "Hello World" and ends with uploading or controlling your Sensor data's from all over the world. You will learn in-depth details about ESP8266 Chip, Modules, Features & Benefits. This book will help you understand the basic concepts of IOT, its benefits, advantages and applications in various industries starting from Home Automation to Healthcare Monitoring to Industrial Transformation. what are you still waiting for? Go ahead and enjoy the IOT ride with Nodemcu ...This book will teach you programming NodeMCU using Arduino IDE. If you

want to learn about the world of IOT and how it changes the world we live in, this is a resource book to get started with. What will you Learn from This book?Chapter 1 : Basics of ElectronicsChapter 2: Hardware Architecture Chapter 3: Internet of ThingsChapter 4: Software InstallationChapter 5: Hardware SetupChapter 6: Types of ESP8266Chapter 7 : ESP8266 Hardware Chapter 8: Getting Started with Arduino IDEChapter 9: Basic Programming in Arduino IDEChapter 10: Getting Started with IoTChapter 11: 15+ IoT ProjectsChapter 12: ESP8266 and MQTTChapter 13: Getting started with Lua

The Internet of Mechanical Things

How To Program ESP8266 With Arduino: Esp8266 Programming Language

Proceedings of the 14th International Conference on Remote Engineering and Virtual Instrumentation REV 2017, held 15-17 March 2017, Columbia University, New York, USA

Build exciting drones by leveraging the capabilities of Arduino and ESP8266

Getting Started for Internet of Things with Launch Pad and ESP8266

17th Mexican International Conference on Artificial Intelligence, MICAI 2018, Guadalajara, Mexico, October 22–27, 2018, Proceedings, Part I

Programming With Arduino: Esp-01 Programming With Arduino Ide

This book takes a deep dive into ubiquitous computing for applications in health, business, education, tourism, and transportation. The rich interdisciplinary contents of the book appeal to readers from diverse disciplines who aspire to create new and innovative research initiatives and applications in ubiquitous computing. Topics include condition monitoring and diagnostics; multi-objective optimization in design, multi-objective optimization of machining parameters, and more. The book benefits researchers, advanced students, as well as practitioners interested in applications of ubiquitous computing. Features practical, tested applications in ubiquitous computing Includes applications such as health, business, education, electronics, tourism, and transportation Applicable to researchers, academics, students, and professionals This book emphasizes the emerging building block of image processing domain, which is known as capsule networks for performing deep image recognition and processing for next-generation imaging science. Recent years have witnessed the continuous development of technologies and methodologies related to image processing, analysis and 3D modeling which have been implemented in the field of computer and image vision. The significant development of these technologies has led to an efficient solution called capsule networks [CapsNet] to solve the intricate challenges in recognizing complex image poses, visual tasks, and object deformation. Moreover, the breakneck growth of computation complexities and computing efficiency has initiated the significant developments of the effective and sophisticated capsule network algorithms and

artificial intelligence [AI] tools into existence. The main contribution of this book is to explain and summarize the significant state-of-the-art research advances in the areas of capsule network [CapsNet] algorithms and architectures with real-time implications in the areas of image detection, remote sensing, biomedical image analysis, computer communications, machine vision, Internet of things, and data analytics techniques.

The aim of this book is to provide a platform to readers through which they can access the applications of 'Internet of Things' in the Automotive field. Internet of Things in Automotive Industries and Road Safety provides the basic knowledge of the modules with interfacing, along with the programming. Several examples for rapid prototyping are included, this to make the readers understand about the concept of IoT. The book comprises of ten chapters for designing different independent prototypes for the automotive applications, and it would be beneficial for the people who want to get started with hardware based project prototypes. The text is based on the practical experience of the authors built up whilst undergoing projects with students and industry. Technical topics discussed in the book include:Role of IoT in automotive industriesArduino and its interfacing with I/O devicesTi Launch Pad and its interfacing with I/O devicesNodeMCU and its interfacing with I/O devicesSerial Communication with Arduino and NodeMCU

Build simple yet amazing robotics projects using ESP8266 About This Book Get familiar with ESP8266 and its features. Build Wi-FI controlled robots using ESP8266 A project based book that will use the ESP8266 board and some of its popular variations to build robots. Who This Book Is For This book is targeted at enthusiasts who are interested in developing low-cost robotics projects using ESP8266. A basic knowledge of programming will be useful but everything you need to know is are covered in the book. What You Will Learn Build a basic robot with the original ESP8266, Arduino UNO, and a motor driver board. Make a Mini Round Robot with ESP8266 HUZZAH Modify your Mini Round Robot by integrating encoders with motors Use the Zumo chassis kit to build a line-following robot by connecting line sensors Control your Romi Robot with Wiimote Build a Mini Robot Rover chassis with a gripper and control it through Wi-Fi Make a robot that can take pictures In Detail The ESP8266 Wi-Fi module is a self-contained SOC with an integrated TCP/IP protocol stack and can give any microcontroller access to your Wi-Fi network. It has a powerful processing and storage capability and also supports application hosting and Wi-Fi networking. This book is all about robotics projects based on the original ESP8266 microcontroller board and some variants of ESP8266 boards. It starts by showing all the necessary things that you need to build your development environment with basic hardware and software components. The book uses the original ESP8266 board and some variants such as the Adafruit HUZZAH ESP8266 and the Adafruit Feather HUZZAH ESP8266 . You will learn how to use different type of chassis kits, motors, motor drivers, power supplies, distribution boards, sensors, and actuators to build robotics projects that can be controlled via Wi-Fi. In addition, you will learn how to use line sensors, the ArduiCam, Wii Remote, wheel encoders, and the Gripper kit to build more specialized robots. By the end of this book, you will have built a Wi-Fi control robot using ESP8266. Style and approach A project-based guide

that will help you build exciting robotics using ESP8266.

Simple Ways Of Programming An ESP8266

A complete guide to helping you build innovative full-scale prototype projects using Raspberry Pi and MQTT protocol

MicroPython for ESP8266 Development Workshop

IOT Major Role of Future Key Technology

ICIPCN 2020

Building Smart Drones with ESP8266 and Arduino

Proceedings of ICRIC 2019

MicroPython is the recreated version of Python 3 that runs in the memory-restricted microcontrollers with a minimum of 256KB of ROM and 16KB of RAM. MicroPython supports chips like ESP32, ESP8266, STM32, nRF52, W600, etc. MicroPython follows Python 3 syntax which makes it easy to programme for microcontrollers. The hardware APIs are capable of handling GPIO pins in microcontrollers. In this course, we discuss the ESP32 dev module as the main controller which has a high level of flexibility in connecting with sensors, on-chip capabilities with onboard WiFi. The ebook includes links to YouTube videos (only important videos) and a code bundle(link to google drive).

This book discusses online engineering and virtual instrumentation, typical working areas for today's engineers and inseparably connected with areas such as Internet of Things, cyber-physical systems, collaborative networks and grids, cyber cloud technologies, and service architectures, to name just a few. It presents the outcomes of the 14th International Conference on Remote Engineering and Virtual Instrumentation (REV2017), held at Columbia University in New York from 15 to 17 March 2017. The conference addressed fundamentals, applications and experiences in the field of online engineering and virtual instrumentation in the light of growing interest in and need for teleworking, remote services and collaborative working environments as a result of the globalization of education. The book also discusses guidelines for education in university-level courses for these topics.

Gain experience of building a next-generation collaboration robot Key Features Get up and running with the fundamentals of robotic programming Program a robot using Python and the Raspberry Pi 3 Learn to build a smart robot with interactive and AI-enabled behaviors Book Description We live in an age where the most difficult human tasks are now automated. Smart and intelligent robots, which will perform different tasks precisely and efficiently, are the requirement of the hour. A combination of Raspberry Pi and Python works

perfectly when making these kinds of robots. Learn Robotics Programming starts by introducing you to the basic structure of a robot, along with how to plan, build, and program it. As you make your way through the book, you will gradually progress to adding different outputs and sensors, learning new building skills, and writing code for interesting behaviors with sensors. You'll also be able to update your robot, and set up web, phone, and Wi-Fi connectivity in order to control it. By the end of the book, you will have built a clever robot that can perform basic artificial intelligence (AI) operations. What you will learn Configure a Raspberry Pi for use in a robot Interface motors and sensors with a Raspberry Pi Implement code to make interesting and intelligent robot behaviors Understand the first steps in AI behavior such as speech recognition visual processing Control AI robots using Wi-Fi Plan the budget for requirements of robots while choosing parts Who this book is for Learn Robotics Programming is for programmers, developers, and enthusiasts interested in robotics and developing a fully functional robot. No major experience required just some programming knowledge would be sufficient.

It is estimated that trillions of devices will be interconnected over the next decade through the Internet of Things, demanding a huge effort from developers. The emergence of low-cost Espressif microcontrollers, with WiFi connectivity, allows independent developers to quickly become part of this process. This book is not intended to comprehensively teach you the theory, but to give you practical and fully functional solutions, in the form of complete programs. Much of the theory is already known by some of the readers, or may be found in many other textbooks. However, the programs presented here include great effort and have many original solutions following one of the basic paradigms of programming: "Keep i(o)t simple". In addition, the most important thing for such a book – all the programs have already been verified by third parties, in this case students from Hyperion University, who have provided a very valuable feedback.

Get Started with Arduino IDE and ESP8266

Raspberry Pi and MQTT Essentials

ESP8266: Programming NodeMCU Using Arduino IDE - Get Started with ESP8266

Measurement Made Simple with Arduino

International Conference on Computing, Communication, Electrical and Biomedical Systems

Internet of Things with ESP8266

ESP8266 Programming Language

This book explores how to work with MicroPython development for ESP8266 modules and boards such as NodeMCU, SparkFun ESP8266 Thing and Adafruit Feather HUZZAH with ESP8266 WiFi. The following is highlight topics in this book *

*Preparing Development Environment * Setting Up MicroPython * GPIO Programming * PWM and Analog Input * Working with I2C * Working with UART * Working with SPI * Working with DHT Module*

This is an introductory course textbook in electronics, programming, and microprocessing. It explains how to connect and control various electronic components, how to wire and read common types of sensors, and how to amplify, filter, and smooth sensor readings. This will allow the learner to start designing and building their own equipment for research projects. The course starts at a beginner level, assuming no prior knowledge in these areas. Programming and microprocessing are taught using the Arduino IDE. This book can serve as a stand-alone crash course for a self-motivated learner. It can also be directly adopted as a course textbook for an elective in a college, university, or high school context. Sections include various fun lab activities that increase in difficulty, and enough theory and practical advice to help complement the activities with understanding. Resources are provided to the instructor to organize the lectures, activities, and individual student design projects. These tools will help any reader turn their electronic project ideas into functional prototypes.

Get familiar with all the concepts related to Raspberry Pi and MQTT, build innovative IoT projects, and discover how to scale these projects to the next level Key Features Learn some of the most popular tools used in IoT – Raspberry Pi, MQTT, ESP8266 and more Build exciting projects such as an IoT weather station and a smart switch board Discover the advantages of taking your MQTT broker global Book Description The future of IoT has the potential to be limitless. Wouldn't it be great if you could add it to your own technological stacks? But where to start? With the basics, of course. In this book, you will start by learning about the most popular hardware and communication protocol, Raspberry Pi and MQTT. You will see how to use them together by setting up your own MQTT server on Raspberry Pi and understand how it works. This book explores MQTT in detail, including the clients and devices that you can connect to your server. You will discover two very popular IoT development boards among project developers: the ESP8266 and ESP32 development boards. Then, you will learn how to build interactive dashboards on your Pi and monitor your client devices. The book also shows you how to build a dashboard using another popular software – Node-RED. You will be able to put your skills to the test by creating two full-scale projects. That's not all: you will also learn how to host your own MQTT server on a virtual cloud service. Finally, you will be guided on how to move forward from here, what technologies to learn, and some project recommendations to polish or test your knowledge. By the end of this book, you will be able to build meaningful projects using Raspberry Pi and MQTT and create dashboards for your projects on Node-RED. What you will learn Configure and use a Raspberry Pi for IoT projects Implement the MQTT communication protocol for projects Understand how to set up the NodeMCU and ESP32 boards as MQTT clients Control a NodeMCU board through a Node-RED dashboard hosted on Raspberry Pi Get LAMP server, Home Assistant, and MariaDB on the Raspberry Pi Set up an online MQTT broker on a cloud service or enterprise service provider platform Build full-scale, end-to-end prototype projects Who this book is for This book is for students who are interested in IoT and want to build projects using the available developer hardware. Educators who want to introduce a course on IoT into their curriculum, technology enthusiasts, and IoT developers who are just getting started will also benefit from this book. No prior knowledge about the two main topics that the book

covers is required - Raspberry Pi and MQTT. A basic understanding of what IoT is will also be useful but not mandatory.

This book comprises select peer-reviewed proceedings of the International Conference Trending Moments and Steer Forces – Civil Engineering Today (TMSF 2019). It presents latest research in different domains of civil engineering like structural and concrete engineering, geotechnical engineering, transportation engineering, environmental engineering, and construction technology and management. The contents also include miscellaneous applications of civil engineering in a wide range of technical and societal problems making use of engineering principles and relational data structures involving measurement sciences. Given the range of topics covered, this book can be useful for students, researchers as well as practitioners working in the field of civil engineering.

Arduino Essentials

IOT Based Simple and Efficient Projects Using Arduino, Raspberry Pi NAS Server, Node MCU ESP8266 and Cloud Platforms

Advances in Soft Computing

21 different measurements, covers all physical and electrical parameter with code and circuit

Zero to Hero: ESP8266

Recent Trends in Civil Engineering

Teknika: Jurnal Sains dan Teknologi, Vol 17(2), Tahun 2021

This multi-contributed handbook focuses on the latest workings of IoT (internet of Things) and Big Data. As the resources are limited, it's the endeavor of the authors to support and bring the information into one resource. The book is divided into 4 sections that covers IoT and technologies, the future of Big Data, algorithms, and case studies showing IoT and Big Data in various fields such as health care, manufacturing and automation. Features Focuses on the latest workings of IoT and Big Data Discusses the emerging role of technologies and the fast-growing market of Big Data Covers the movement toward automation with hardware, software, and sensors, and trying to save on energy resources Offers the latest technology on IoT Presents the future horizons on Big Data

Teknika: Jurnal Sains dan Teknologi Volume 17, Number 2, 2021

Build amazing Internet of Things projects using the ESP8266 Wi-Fi chip About This Book Get to know the powerful and low cost ESP8266 and build interesting projects in the field of Internet of Things Configure your ESP8266 to the cloud and explore the networkable modules that will be utilized in the IoT projects This step-by-step guide teaches you the basics of IoT with ESP8266 and makes your life easier Who This Book Is For This book is for those who want to build powerful and inexpensive IoT projects using the ESP8266 WiFi chip, including those who are new to IoT, or those who already have experience with other platforms such as Arduino. What You Will

Learn Control various devices from the cloud Interact with web services, such as Twitter or Facebook Make two ESP8266 boards communicate with each other via the cloud Send notifications to users of the ESP8266, via email, text message, or push notifications Build a physical device that indicates the current price of Bitcoin Build a simple home automation system that can be controlled from the cloud Create your own cloud platform to control ESP8266 devices In Detail The Internet of Things (IoT) is the network of objects such as physical things embedded with electronics, software, sensors, and connectivity, enabling data exchange. ESP8266 is a low cost WiFi microcontroller chip that has the ability to empower IoT and helps the exchange of information among various connected objects. ESP8266 consists of networkable microcontroller modules, and with this low cost chip, IoT is booming. This book will help deepen your knowledge of the ESP8266 WiFi chip platform and get you building exciting projects. Kick-starting with an introduction to the ESP8266 chip, we will demonstrate how to build a simple LED using the ESP8266. You will then learn how to read, send, and monitor data from the cloud. Next, you'll see how to control your devices remotely from anywhere in the world. Furthermore, you'll get to know how to use the ESP8266 to interact with web services such as Twitter and Facebook. In order to make several ESP8266s interact and exchange data without the need for human intervention, you will be introduced to the concept of machine-to-machine communication. The latter part of the book focuses more on projects, including a door lock controlled from the cloud, building a physical Bitcoin ticker, and doing wireless gardening. You'll learn how to build a cloud-based ESP8266 home automation system and a cloud-controlled ESP8266 robot. Finally, you'll discover how to build your own cloud platform to control ESP8266 devices. With this book, you will be able to create and program Internet of Things projects using the ESP8266 WiFi chip. Style and approach This is a step-by-step guide that provides great IOT projects with ESP8266. All the key concepts are explained details with the help of examples and demonstrations of the projects. 1st Warmadewa International Conference on Science, Technology and Humanity will be an annual event hosted by Warmadewa Research Institution, Universitas Warmadewa. This year (2021), will be the first WICSTH will be held on 7 - 8 September 2021 at Auditorium Widya Sabha, Universitas Warmadewa Denpasar-Bali, Indonesia. In the direction of a new life order during pandemic COVID-19, Science, technology and humanity especially in ecotourism is a crucial topic to address, this is a momentum to bring together various critical views and thoughts from various fields of science related to strategies that can be done in developing and solving ecotourism

resilience during pandemic COVID-19 in Science, technology and humanity study.The conference invites delegates from across Indonesian and is usually attended by more than 100 participants from university academics, researchers, practitioners, and professionals across a wide range of industries.

Nodemcu Programming, ESP8266 For Beginners: Esp8266Mod 12E

Raspberry Pi IoT Projects

Recent Advances in Materials and Modern Manufacturing

Image Processing and Capsule Networks

Prototyping Experiments for Makers

(Internet of Things, IOT, Projects in Internet of Things, Internet of Things for Beginners, NodeMCU Programming, ESP8266)