# *Arduino Robotic Projects Grimmett Richard*

Exciting new capabilities to enable even easier DIY robotics with BeagleBone Blue About This Book Build powerful robots with the all new BeagleBone Blue Communicate with your robot and teach it to detect and respond to its environment Control walking, rolling, swimming, and flying robots with your iOS and Android mobile devices Who This Book Is For This book is for anyone who is curious about using new, low-cost hardware to create robotic projects and have previously been the domain of research labs, major universities, or defence departments. Some programming experience would be useful, but if you know how to use a personal computer, you can use this book to construct far more complex systems than you would have thought possible. What You Will Learn Power on and configure the BeagleBone Blue Get to know Simple programming techniques to enable the unique hardware capabilities of the BeagleBone Blue. Connect standard hardware to enable your projects to see, speak, hear, and move Build advanced capabilities into your projects, such as GPS and sonar sensors Build complex projects that can fly, or go under or on the water In Detail BeagleBone Blue is effectively a small, light, cheap computer in a similar vein to Raspberry Pi and Arduino. It has all of the extensibility of today's desktop machines, but without the bulk, expense, or noise. This project guide provides step-by-step instructions that enable anyone to use this new, low-cost platform in some fascinating robotics projects. By the time you are finished, your projects will be able to see, speak, listen, detect their surroundings, and move in a variety of amazing ways. The book begins with unpacking and powering up the components. This includes guidance on what to purchase and how to connect it all successfully, and a primer on programming the BeagleBone Blue. You will add additional software functionality available from the open source community, including making the system see using a webcam, hear using a microphone, and speak using a speaker. You will then learn to use the new hardware capability of the BeagleBone Blue to make your robots move, as well as discover how to add sonar sensors to avoid or find objects. Later, you will learn to remotely control your robot through iOS and Android devices. At the end of this book, you will see how to integrate all of these functionalities to work together, before developing the most impressive robotics projects: Drone and Submarine. Style and approach Develop practical example projects with detailed explanations, combine the projects in a vast number of ways to create different robot designs, or work through them in sequence to discover the full capability of the BeagleBone Blue.

If you want a simple guide to building complex robots, then this book is for you. You'll need some programming knowledge and experience working with mechanical systems.

Get started with the smallest, cheapest, and highest-utility Pi ever□Raspberry Pi Zero About This Book Get started with Raspberry Pi Zero and put all of its exciting features to use Create fun games and programs with little or no programming experience Learn to use this super-tiny PC to control hardware and software for work, play, and everything else Who This Book Is For This book is for hobbyists and programmers who are taking their first steps toward using Raspberry Pi Zero. No programming experience is required, although some Python programming experience might be useful. What You Will Learn Understand how to initially download the operating system and set up Raspberry Pi Zero Find out how to control the GPIO pins of Raspberry Pi Zero to control LED circuits Get to grips with adding hardware to the GPIO to control more complex hardware such as motors Add USB control hardware to control a complex robot with 12 servos Include speech recognition so that projects can receive commands Enable the robot to communicate with the world around it by adding speech output Control the robot from a distance and see what the robot is seeing by adding wireless communication Discover how to build a Robotic hand and a Quadcopter In Detail Raspberry Pi Zero is half the size of Raspberry Pi A, only with twice the utility. At just three centimeters wide, it packs in every utility required for full-fledged computing tasks. This practical tutorial will help you quickly get up and running with Raspberry Pi Zero to control hardware and software and write simple programs and games. You will learn to build creative programs and exciting games with little or no programming experience. We cover all the features of Raspberry Pi Zero as you discover how to configure software and hardware, and control external devices. You will find out how to navigate your way in Raspbian, write simple Python scripts, and create simple DIY programs. Style and approach This is a practical and fun ?getting started? tutorial that will guide you through everything new that the Raspberry Pi has to offer.

This book covers all aspects of robot intelligence from perception at sensor level and reasoning at cognitive level to behavior planning at execution level for each low level segment of the machine. It also presents the technologies for cognitive reasoning, social interaction with humans, behavior generation, ability to cooperate with other robots, ambience awareness, and an artificial genome that can be passed on to other robots. These technologies are to materialize cognitive intelligence, social intelligence, behavioral intelligence, collective intelligence, ambient intelligence and genetic intelligence. The book aims at serving researchers and practitioners with a timely dissemination of the recent progress on robot intelligence technology and its applications, based on a collection of papers presented at the 4th International Conference on Robot Intelligence Technology and Applications (RiTA), held in Bucheon, Korea, December 14 - 16, 2015. For better readability, this edition has the total of 49 articles grouped into 3 chapters: Chapter I: Ambient, Behavioral, Cognitive, Collective, and Social Robot Intelligence, Chapter II: Computational Intelligence and Intelligent Design for Advanced Robotics, Chapter III: Applications of Robot Intelligence Technology .

Results from the 4th International Conference on Robot Intelligence Technology and Applications

Tools and Techniques for Building with Embedded Linux

Linux-Powered Electronic Projects With Python and JavaScript

C Programming For Dummies

Building a Home Security System with BeagleBone

Paris Sex Underground

*This book will show you how to use your Arduino to control a variety of different robots, while providing step-by-step instructions on the entire robot building process. You'll learn Arduino basics as well as the characteristics of different types of motors used in robotics. You also discover controller methods and failsafe methods, and learn how to apply them to your project. The book starts with basic robots and moves into more complex projects, including a GPS-enabled robot, a robotic lawn mower, a fighting bot, and even a DIY Segway-clone. Introduction to the Arduino and other components needed for robotics Learn how to build motor controllers Build bots from simple line-following and bump-sensor bots to more complex robots that can mow your lawn, do battle, or even take you for a ride Please note: the print version of this title is black & white; the eBook is full color.*

*Harness the power of Python objects and data structures to implement algorithms for analyzing your data and efficiently extracting information Key FeaturesTurn your designs into working software by learning the Python syntaxWrite robust code with a solid understanding of Python data structuresUnderstand when to use the functional or the OOP approachBook Description This Learning Path helps you get comfortable with the world of Python. It starts with a thorough and practical introduction to Python. You'll quickly start writing programs, building websites, and working with data by harnessing Python's renowned data science libraries. With the power of linked lists, binary searches, and sorting algorithms, you'll easily create complex data structures, such as graphs, stacks, and queues. After understanding cooperative inheritance, you'll expertly raise, handle, and manipulate exceptions. You will effortlessly integrate the object-oriented and not-so-object-oriented aspects of Python, and create maintainable applications using higher level design patterns. Once you've covered core topics, you'll understand the joy of unit testing and just how easy it is to create unit tests. By the end of this Learning Path, you will have built components that are easy to understand, debug, and can be used across different applications. This*

*Learning Path includes content from the following Packt products: Learn Python Programming - Second Edition by Fabrizio RomanoPython Data Structures and Algorithms by Benjamin BakaPython 3 Object-Oriented Programming by Dusty PhillipsWhat you will learnUse data structures and control flow to write codeUse functions to bundle together a sequence of instructionsImplement objects in Python by creating classes and defining methodsDesign public interfaces using abstraction, encapsulation and information hidingRaise, define, and manipulate exceptions using special error objectsCreate bulletproof and reliable software by writing unit testsLearn the common programming patterns and algorithms used in PythonWho this book is for If you are relatively new to coding and want to write scripts or programs to accomplish tasks using Python, or if you are an object-oriented programmer for other languages and seeking a leg up in the world of Python, then this Learning Path is for you. Though not essential, it will help you to have basic knowledge of programming and OOP.*

*Many people think of Linux as a computer operating system, running on users' desktops and powering servers. But Linux can also be found inside many consumer electronics devices. Whether they're the brains of a cell phone, cable box, or exercise bike, embedded Linux systems blur the distinction between computer and device. Many makers love microcontroller platforms such as Arduino, but as the complexity increases in their projects, they need more power for applications, such as computer vision. The BeagleBone is an embedded Linux board for makers. It's got built-in networking, many inputs and outputs, and a fast processor to handle demanding tasks. This book introduces you to both the original BeagleBone and the new BeagleBone Black and gets you started with projects that take advantage of the board's processing power and its ability to interface with the outside world.*

*Arduino Robotic Projects*

*BeagleBone: Creative Projects for Hobbyists*

*Monitoreo, control y adquisición de datos con arduino y visual basic .net*

*A Guided Tour for All*

*Using Python and OpenCV*

*Zero to AI*

*BeagleBone Robotic Projects*

Exciting new capabilities to enable even easier DIY robotics with BeagleBone BlueAbout This Book* Build powerful robots with the all new BeagleBone Blue* Communicate with your robot and teach it to detect and respond to its environment* Control walking, rolling, swimming, and flying robots with your iOS and Android mobile devicesWho This Book Is ForThis book is for anyone who is curious about using new, low-cost hardware to create robotic projects and have previously been the domain of research labs, major universities, or defence departments. Some programming experience would be useful, but if you know how to use a personal computer, you can use this book to construct far more complex systems than you would have thought possible.What You Will Learn* Power on and configure the BeagleBone Blue* Get to know Simple programming techniques to enable the unique hardware capabilities of the BeagleBone Blue.* Connect standard hardware to enable your projects to see, speak, hear, and move* Build advanced capabilities into your projects, such as GPS and sonar sensors* Build complex projects that can fly, or go under or on the waterIn DetailBeagleBone Blue is effectively a small, light, cheap computer in a similar vein to Raspberry Pi and Arduino. It has all of the extensibility of today's desktop machines, but without the bulk, expense, or noise. This project guide provides step-by-step instructions that enable anyone to use this new, low-cost platform in some fascinating robotics projects. By the time you are finished, your projects will be able to see, speak, listen, detect their surroundings, and move in a variety of amazing ways.The book begins with unpacking and powering up the components. This includes guidance on what to purchase and how to connect it all successfully, and a primer on programming the BeagleBone Blue. You will add additional software functionality available from the open source community, including making the system see using a webcam, hear using a microphone, and speak using a speaker.You will then learn to use the new hardware capability of the BeagleBone Blue to make your robots move, as well as discover how to add sonar sensors to avoid or find objects. Later, you will learn to remotely control your robot through iOS and Android devices. At the end of this book, you will see how to integrate all of these functionalities to work together, before developing the most impressive robotics projects: Drone and Submarine.Style and approachDevelop practical example projects with detailed explanations, combine the projects in a vast number of ways to create different robot designs, or work through them in sequence to discover the full capability of the BeagleBone Blue.

Our future scientists and professionals must be conversant in computational techniques. In order to facilitate integration of computer methods into existing physics courses, this textbook offers a large number of worked examples and problems with fully guided solutions in Python as well as other languages (Mathematica, Java, C, Fortran, and Maple). It’s also intended as a self-study guide for learning how to use computer methods in physics. The authors include an introductory chapter on numerical tools and indication of computational and physics difficulty level for each problem. Readers also benefit from the following features: • Detailed explanations and solutions in various coding languages. • Problems are ranked based on computational and physics difficulty. • Basics of numerical methods covered in an introductory chapter. • Programming guidance via flowcharts and pseudocode. Rubin Landau is a Distinguished Professor Emeritus in the Department of Physics at Oregon State University in Corvallis and a Fellow of the American Physical Society (Division of Computational Physics). Manuel Jose Paez-Mejia is a Professor of Physics at Universidad de Antioquia in Medellín, Colombia.

In-depth instruction and practical techniques for buildingwith the BeagleBone embedded Linux platform Exploring BeagleBone is a hands-on guide to bringinggadgets, gizmos, and robots to life using the popular BeagleBoneembedded Linux platform. Comprehensive content and deep detailprovide more than just a BeagleBone instructionmanual—you’ll also learn the underlying engineeringtechniques that will allow you to create your own projects. Thebook begins with a foundational primer on essential skills, andthen gradually moves into communication, control, and advancedapplications using C/C++, allowing you to learn at your own pace.In addition, the book’s companion website featuresinstructional videos, source code, discussion forums, and more, toensure that you have everything you need. The BeagleBone’s small size, high performance, low cost,and extreme adaptability have made it a favorite developmentplatform, and the Linux software base allows for complex yetflexible functionality. The BeagleBone has applications in smartbuildings, robot control, environmental sensing, to name a few;and, expansion boards and peripherals dramatically increase thepossibilities. Exploring BeagleBone provides areader-friendly guide to the device, including a crash coursein computer engineering. While following step by step, you can: Get up to speed on embedded Linux, electronics, andprogramming Master interfacing electronic circuits, buses and modules, withpractical examples Explore the Internet-connected BeagleBone and the BeagleBonewith a display Apply the BeagleBone to sensing applications, including videoand sound Explore the BeagleBone’s Programmable Real-TimeControllers Hands-on learning helps ensure that your new skills stay withyou, allowing you to design with electronics, modules, orperipherals even beyond the BeagleBone. Insightful guidance andonline peer support help you transition from beginner to expert asyou master the techniques presented in Exploring BeagleBone,the practical handbook for the popular computing platform.

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.

Beginning Robotics with Raspberry Pi and Arduino
Getting Started with Raspberry Pi Zero
Getting Started with BeagleBone
Robot Intelligence Technology and Applications 4
Raspberry Pi: Amazing Projects from Scratch
Mastering BeagleBone Robotics

**Fiendishly Fun Ways to Use the BeagleBone Black! This wickedly inventive guide shows you how to program and build fun and fascinating projects with the BeagleBone Black. You'll learn how to connect the BeagleBone Black to your computer and program it, quickly mastering BoneScript and other programming tools so you can get started right away. 30 BeagleBone Black Projects for the Evil Genius is filled with a wide variety of do-it-yourself LED, sensor, robotics, display, audio, and spy gadgets. You'll also get tips and techniques that will help you design your own ingenious devices. Features step-by-step instructions and helpful illustrations Provides full schematic and breadboard layout diagrams for the projects Includes detailed programming code Removes the frustration factor—all required parts are listed along with sources Build these and other clever creations: High-powered LED Morse code sender RGB LED fader GPS tracker Temperature sensor Light level indicator Web-controlled rover Plant hydration system Sentinel turret 7-segment clock Display for sensor information Internet radio Imperial march indicator Intruder alert using Twitter API Lie detector Auto dog barker**

**This book is for anyone who has ever been curious about using the Intel Galileo to create electronics projects. Some programming background is useful, but if you know how to use a personal computer, with the aid of the step-by-step instructions in this book, you can construct complex electronics projects that use the Intel Galileo.**

**Este libro está dirigido a los estudiantes de las carreras de Mecatrónica, Electrónica y Sistemas, interesados en integrar la plataforma de Arduino con la herramienta de programación .NET. En esta obra se explica paso a paso cada uno de los proyectos incluidos, de forma que no es necesario que el estudiante conozca a fondo la plataforma de Arduino. Además, sólo se requieren conocimientos básicos de programación y electrónica. Conozca el material, el código y las librerías necesarias para el desarrollo de proyectos de monitoreo, control y adquisición de datos. Desarrolle proyectos que integren la plataforma de Arduino con la herramienta de programación Visual Basic .NET. Realice las prácticas presentadas en cada uno de los proyectos del libro En la parte inferior de la primera página del libro encontrará el código de acceso que le permitirá acceder de forma gratuita a los contenidos adicionales del libro en www.marcombo.info. Rubén Oliva Ramos. Ingeniero en Sistemas Computacionales por el Instituto Tecnológico de León, Maestro en Ingeniería de Sistemas Electrónicos y Computacionales por la Universidad de la Salle Bajío en León, Guanajuato. Especialista en teleinformática y redes por la Universidad de la Salle Bajío en León, Guanajuato, y desde 2008 es docente en la Universidad de La Salle Bajío a nivel posgrado en la Especialidad en Mecatrónica y en la maestría en Diseño e Ingeniería de Sistemas Mecatrónicos.**

**This book is for anyone who has been curious about using Arduino to create robotic projects that were previously the domain of research labs of major universities or defense departments. Some programming background is useful, but if you know how to use a PC, you can, with the aid of the step-by-step instructions in this book, construct complex robotic projects that can roll, walk, swim, or fly.**

**Intel Galileo Essentials**
**Field Guide to the Birds of Bangladesh**
**Building Smart Drones with ESP8266 and Arduino**
**Raspberry Pi Robotic Blueprints**
**Understand key data structures and use Python in object-oriented programming**
**Raspberry Pi Robotic Projects**

Gain a gentle introduction to the world of Artificial Intelligence (AI) using the Raspberry Pi as the computing platform. Most of the major AI topics will be explored, including expert systems, machine learning both shallow and deep, fuzzy logic control, and more! AI in action will be demonstrated using the Python language on the Raspberry Pi. The Prolog language will also be introduced and used to demonstrate fundamental AI concepts. In addition, the Wolfram language will be used as part of the deep machine learning demonstrations. A series of projects will walk you through how to implement AI concepts with the Raspberry Pi. Minimal expense is needed for the projects as only a few sensors and actuators will be required. Beginners and hobbyists can jump right in to creating AI projects with the Raspberry PI using this book. What You'll Learn What AI is and–as importantly–what it is not Inference and expert systems Machine learning both shallow and deep Fuzzy logic and how to apply to an actual control system When AI might be appropriate to include in a system Constraints and limitations of the Raspberry Pi AI implementation Who This

Book Is For Hobbyists, makers, engineers involved in designing autonomous systems and wanting to gain an education in fundamental AI concepts, and non-technical readers who want to understand what AI is and how it might affect their lives.
This book is for enthusiasts who want to use the Raspberry Pi to build complex robotics projects. With the aid of the step-by-step instructions in this book, you can construct complex robotics projects that can move, talk, listen, see, swim, or fly. No previous Raspberry Pi robotics experience is assumed, but even experts will find unexpected and interesting information in this invaluable guide.
Though your application serves its purpose, it might not be a high performer. Learn techniques to accurately predict code efficiency, easily dismiss inefficient solutions, and improve the performance of your application. Key Features Explains in detail different algorithms and data structures with sample problems and Java implementations where appropriate Includes interesting tips and tricks that enable you to efficiently use algorithms and data structures Covers over 20 topics using 15 practical activities and exercises Book Description Learning about data structures and algorithms gives you a better insight on how to solve common programming problems. Most of the problems faced everyday by programmers have been solved, tried, and tested. By knowing how these solutions work, you can ensure that you choose the right tool when you face these problems. This book teaches you tools that you can use to build efficient applications. It starts with an introduction to algorithms and big O notation, later explains bubble, merge, quicksort, and other popular programming patterns. You ' ll also learn about data structures such as binary trees, hash tables, and graphs. The book progresses to advanced concepts, such as algorithm design paradigms and graph theory. By the end of the book, you will know how to correctly implement common algorithms and data structures within your applications. What you will learn Understand some of the fundamental concepts behind key algorithms Express space and time complexities using Big O notation. Correctly implement classic sorting algorithms such as merge and quicksort Correctly implement basic and complex data structures Learn about different algorithm design paradigms, such as greedy, divide and conquer, and dynamic programming Apply powerful string matching techniques and optimize your application logic Master graph representations and learn about different graph algorithms Who this book is for If you want to better understand common data structures and algorithms by following code examples in Java and improve your application efficiency, then this is the book for you. It helps to have basic knowledge of Java, mathematics and object-oriented programming techniques.
The Raspberry Pi B2 is an inexpensive embedded processor that provides a high-performance Linux development environment. This book is a fast-paced guide that will show you how to use Raspberry Pi technology to build a biped robot that can interact with its environment. We start off by explaining the basics of getting your Raspberry Pi up and running, ready to be mounted on your biped platform. After this, you will be introduced to the art of constructing a mechanism for the biped platform. You will then learn to develop a vision system for your robot, as well as a means by which you can control and monitor it. At the end of this book, you will have learned enough to build a complex biped robot that can walk, turn, find its way, and "see" its environment.
Exploring BeagleBone
Raspberry Pi Robotics Projects - Second Edition
A non-technical, hype-free guide to prospering in the AI era
Getting Started with Python
Learn socket programming in C and write secure and optimized network code
Emerging Topics and Questions in Infocommunication Technologies
**Work through a mix of amazing robotic projects using the Raspberry Pi Zero or the Raspberry Pi 3 About This Book Easy to follow instructions, yet the ones that help you build powerful robots, and exclusive coverage of mobile robots with the Pi Zero Build robots that can run, swim and fly and the cutting-edge dimension of robotics that is possible with the Raspberry Pi Zero and Pi 3 Interact with your projects wirelessly and make sci-fi possible, right in your home Who This Book Is For This book is for hobbyists and programmers who are excited about using the Raspberry Pi 3 and Raspberry Pi Zero. It is for those who are taking their first steps towards using these devices to control hardware and software and write simple programs that enable amazing projects. No programming experience is required, Just a little computer and mechanical aptitude and the desire to build some interesting projects. What You Will Learn Control a variety of different DC motors Add a USB webcam to see what your robot can see Attach a projector to project information Insert USB control hardware to control a complex robot with two legs Include speech recognition so that your projects can receive commands Add speech output to that the robot can communicate with the world around it Include wireless communication so that you can see what the robot is seeing and control the robot from a distance In Detail This book will allow you to take full advantage of Raspberry Pi Zero and Raspberry Pi 3 by building both simple and complex robotic projects. The book takes a mission-critical approach to show you how to build amazing robots and helps you decide which board to use for which type of robot. The book puts a special emphasis on designing mobile (or movable) robots using the Raspberry Pi Zero. The projects will show inexpensive, yet powerful, ways to take full advantage. It will teach you how to program Raspberry Pi, control the movement of your robot, and add features to your robots. Style and approach This fun and practical tutorial contain step-by-step instructions to get you hands-on building inexpensive projects. It contains mission-critical chapters and everything you need to know to get started.**
**Utilize the powerful ingredients of Raspberry Pi to bring to life your amazing robots that can act, draw, and have fun with laser tags About This Book Learn to implement a number of features offered by Raspberry Pi to build your own amazing robots Understand how to add vision and voice to your robots. This fast-paced practical guide comprises a number of creative projects to take your Raspberry Pi knowledge to the next level Who This Book Is For This all-encompassing guide was created for anyone who is interested in expanding their knowledge in applying the peripherals of Raspberry Pi. If you have a fancy for building complex-looking robots with simple, inexpensive, and readily available hardware, then this book is ideal for you. Prior**

understanding of Raspberry Pi with simple mechanical systems is recommended. What You Will Learn Add sensors to your robot so that it can sense the world around it Know everything there is to know about accessing motors and servos to provide movement to the robotic platform Explore the feature of adding vision to your robot so it can “see” the world around it Refine your robot with the skill of speech recognition so that it can receive commands Polish your robot by adding speech output so it can communicate with the world around it Maximize the use of servos in Raspberry Pi to create a drawing robot Strengthen your robot by adding wireless communication skills so you can see what the robot is seeing and control it from a distance Build an unbelievable autonomous hexcopter controlled by Raspberry Pi In Detail The Raspberry Pi is a series of credit card-sized single-board computers developed in the UK by the Raspberry Pi Foundation with the intention of promoting the teaching of basic computer science in schools. The Raspberry Pi is known as a tiny computer built on a single circuit board. It runs a Linux operating system, and has connection ports for various peripherals so that it can be hooked up to sensors, motors, cameras, and more. Raspberry Pi has been hugely popular among hardware hobbyists for various projects, including robotics. This book gives you an insight into implementing several creative projects using the peripherals provided by Raspberry Pi. To start, we'll walk through the basic robotics concepts that the world of Raspberry Pi offers us, implementing wireless communication to control your robot from a distance. Next, we demonstrate how to build a sensible and a visionary robot, maximizing the use of sensors and step controllers. After that, we focus on building a wheeled robot that can draw and play hockey. To finish with a bang, we'll build an autonomous hexcopter, that is, a flying robot controlled by Raspberry Pi. By the end of this book, you will be a maestro in applying an array of different technologies to create almost any imaginable robot. Style and approach This book is an easy-to-follow, project-based guide that throws you directly into the action of creating almost any imaginable robot through blueprints. It is full of step by step instructions and screenshots to help you build amazing robots in no time at all.

Learn how to use a Raspberry Pi in conjunction with an Arduino to build a basic robot with advanced capabilities. Getting started in robotics does not have to be difficult. This book is an insightful and rewarding introduction to robotics and a catalyst for further directed study. You'll be led step by step through the process of building a robot that uses the power of a Linux based computer paired with the simplicity of Arduino. You’ll learn why the Raspberry Pi is a great choice for a robotics platform; its strengths as well as its shortcomings; how to overcome these limitations by implementing an Arduino; and the basics of the Python programming language as well as some of the more powerful features. With the Raspberry Pi you can give your project the power of a Linux computer, while Arduino makes interacting with sensors and motors very easy. These two boards are complimentary in their functions; where one falters the other performs admirably. The book also includes references to other great works to help further your growth in the exciting, and now accessible, field of smart robotics. As a bonus, the final chapter of the book demonstrates the real power of the Raspberry Pi by implementing a basic vision system. Using OpenCV and a standard USB web cam, you will build a robot that can chase a ball. What You'll Learn Install Raspbian, the operating system that drives the Raspberry Pi Drive motors through an I2C motor controller Read data through sensors attached to an Arduino Who This Book Is For Hobbyists and students looking for a rapid start in robotics. It assumes no technical background. Readers are guided to pursue the areas that interest them in more detail as they learn.

Create high-tech walking, talking, and thinking robots "McComb hasn’t missed a beat. It’s an absolute winner!" -GeekDad, Wired.com Breathe life into the robots of your dreams—without advanced electronics or programming skills. Arduino Robot Bonanza shows you how to build autonomous robots using ordinary tools and common parts. Learn how to wire things up, program your robot's brain, and add your own unique flair. This easy-to-follow, fully illustrated guide starts with the Teachbot and moves to more complex projects, including the musical TuneBot, the remote-controlled TeleBot, a slithering snakelike 'bot, and a robotic arm with 16 inches of reach! Get started on the Arduino board and software Build a microcontroller-based brain Hook up high-tech sensors and controllers Write and debug powerful Arduino apps Navigate by walking, rolling, or slithering Program your 'bot to react and explore on its own Add remote control and wireless video Generate sound effects and synthesized speech Develop functional robot arms and grippers Extend plans and add exciting features

The Erotic World Of Jacques & Charles Biederer

Hands-On Network Programming with C

BeagleBone Robotic Projects - Second Edition

Build exciting drones by leveraging the capabilities of Arduino and ESP8266

Beginning Java Data Structures and Algorithms

Raspberry Pi Robotics Essentials

*Summary How can artificial intelligence transform your business? In Zero to AI, you’ll explore a variety of practical AI applications you can use to improve customer experiences, optimize marketing, help you cut costs, and more. In this engaging guide written for business leaders and technology pros alike, authors and AI experts Nicolò*

*Valigi and Gianluca Mauro use fascinating projects, hands-on activities, and real-world explanations to make it clear how your business can benefit from AI. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology There's no doubt that artificial intelligence has made some impressive headlines recently, from besting chess and Go grand masters to producing uncanny deep fakes that blur the lines of reality. But what can AI do for you? If you want to understand how AI will impact your business before you invest your time and money, this book is for you. About the book Zero to AI uses clear examples and jargon-free explanations to show the practical benefits of AI. Each chapter explores a real-world case study demonstrating how companies like Google and Netflix use AI to shape their industries. You begin at the beginning, with a primer on core AI concepts and realistic business outcomes. To help you prepare for the transition, the book breaks down a successful AI implementation, including advice on hiring the right team and making decisions about resources, risks, and costs. What's inside Identifying where AI can help your organization Designing an AI strategy Evaluating project scope and business impact Using AI to boost conversion rates, curate content, and analyze feedback Understanding how modern AI works and what it can/can't do About the reader For anyone who wants to gain an understanding of practical artificial intelligence and learn how to design and develop projects with high business impact. About the author Gianluca Mauro and Nicolò Valigi are the cofounders of AI Academy, a company specializing in AI trainings and consulting. Table of Contents: 1. An introduction to artificial intelligence PART 1 - UNDERSTANDING AI 2. Artificial intelligence for core business data 3. AI for sales and marketing 4. AI for media 5. AI for natural language 6. AI for content curation and community building PART 2 - BUILDING AI 7. Ready—finding AI opportunities 8. Set—preparing data, technology, and people 9. Go—AI implementation strategy 10. What lies ahead*

*Learn to build software and hardware projects featuring the Raspberry Pi! Congratulations on becoming a proud owner of a Raspberry Pi! Following primers on getting your Pi up and running and programming with Python, the authors walk you through 16 fun projects of increasing sophistication that let you develop your Raspberry Pi skills. Among other things you will: Write simple programs, including a tic-tac-toe game Re-create vintage games similar to Pong and Pac-Man Construct a networked alarm system with door sensors and webcams Build Pi-controlled gadgets including a slot car racetrack and a door lock Create a reaction timer and an electronic harmonograph Construct a Facebook-enabled Etch A Sketch-type gadget and a Twittering toy Raspberry Pi Projects is an excellent way to dig deeper into the capabilities of the Pi and to have great fun while doing it.*

*Czech-born photographer Jacques Biederer relocated to Paris, France in 1908, and was followed by his brother Charles a few years later. Their photographic studio, Studio Biederer, specialised in underground and taboo images of sexual fetishes, lesbianism, flagellation, and other erotic subjects. As well as publishing these images as clandestine prints under the name Éditions Ostra, the Biederers also produced a number of fetish sex films for secret projection. Paris Sex Underground collects 60 duotone images originally produced by the Biederer brothers, covering the full range of their extraordinary and ground-breaking work, work which paved the way for later SM pioneers such as New York's Irving Klaw.*

*A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C Key FeaturesLeverage your C or C++ programming skills to build powerful network applicationsGet to grips with a variety of network protocols that allow you to load web pages, send emails, and do much moreWrite portable network code for operating systems such as Windows, Linux, and macOSBook Description Network programming, a challenging topic in C, is made easy to understand with a careful exposition of socket programming APIs. This book gets you started with modern network programming in C and the right use of relevant operating system APIs. This book covers core concepts, such as hostname resolution with DNS, that are crucial to the functioning of the modern web. You'll delve into the fundamental network protocols, TCP and UDP. Essential techniques for networking paradigms such as client-server and peer-to-peer models are explained with the help of practical examples. You'll also study HTTP and HTTPS (the protocols responsible for web pages) from both the client and server perspective. To keep up with current trends, you'll apply the concepts covered in this book to gain insights into web programming for IoT. You'll even get to grips with network monitoring and implementing security best practices. By the end of this book, you'll have experience of working with client-server applications, and be able to implement new network programs in C. The code in this book is compatible with the older C99 version as*

*well as the latest C18 and C++17 standards. Special consideration is given to writing robust, reliable, and secure code that is portable across operating systems, including Winsock sockets for Windows and POSIX sockets for Linux and macOS. What you will learnUncover cross-platform socket programming APIsImplement techniques for supporting IPv4 and IPv6Understand how TCP and UDP connections work over IPDiscover how hostname resolution and DNS workInterface with web APIs using HTTP and HTTPSAcquire hands-on experience with Simple Mail Transfer Protocol (SMTP)Apply network programming to the Internet of Things (IoT)Who this book is for If you're a developer or a system administrator who wants to enter the world of network programming, this book is for you. Basic knowledge of C programming is assumed.*

***ROS Robotics Projects***

***Birds of Pakistan***

***Sharpen your problem solving skills by learning core computer science concepts in a pain-free manner***

***Arduino Robot Bonanza***

***Sociorobot World***

***Beginning Artificial Intelligence with the Raspberry Pi***

*A successor to Birds of the Indian Subcontinent", by the same authors, this handbook explores the birdlife of northern India and Pakistan. The plates are accompanied by text that highlights the identification, voice, habitat, altitudinal range, distribution and status of the birds. The text is on pages facing the plates for easy reference, and there are distribution maps for every species."*

*This guide is a successor to the much acclaimed Birds of the Indian Subcontinent by two of the same authors. Covering Pakistan, the superb plates are accompanied by a succinct text highlighting identification, voice, habitat, altitudinal range, distribution and status. The text is on facing pages to the plates, for easy reference and there are distribution maps for every species. Like previous guides covering Nepal, Bhutan, Northern India and Southern India, this guide is a perfect size for use in the field and will be an essential companion when visiting this region.*

*Explore the powers of Raspberry Pi and build your very own projects right out of the box About This Book From robotics to gaming, this Learning Path will unlock your creativity! Build your own impressive IoT projects to transform your home Featuring some of Packt's very best Raspberry Pi content, this Learning Path doesn't just get you to your destination – it opens up a whole horizon of possibilities! Who This Book Is For Want new ideas for your next Raspberry Pi project? Got one lying around gathering dust? This Learning Path gets you straight into the creative dirty work of programming and playing with your pi. Whether your new to Raspberry Pi, or an experienced maker, we think this Learning Path will inspire you and get your creative juices flowing! What You Will Learn Discover an aweome range of Raspberry Pi projects Bridge the gap between software and hardware through your Pi and find out how to make an operating system interact with cameras and other hardware Find out how to use your Raspberry Pi for gaming Secure your home with this tiny computer! Make science fiction a reality – build a walking robot In Detail Looking for inspiration for your next Raspberry Pi project? Not sure where to begin? This Learning Path is the perfect place to begin, providing you with an accessible yet comprehensive journey through Raspberry Pi. Following three modules, you'll soon be confident and prepared to get creative with your microcomputer. Raspberry Pi by Example is the first module in this Learning Path – and it does exactly what it says. It doesn't just teach, it shows you how to go and build some awesome Raspberry Pi projects immediately. Build and play your own games with the Pi, build a complete Internet of Things home automation system that controls your house through Twitter... let your imagination run wild! In the next module we'll look in more depth at building a home security system. You'll be using some of the skills you devoped through the first module, but apply them to something more intricate and impressive. Using a Linux based operating system as the foundations, you'll gradually build up an entire security infrastructure adding cameras, remote controls, and even intrusion alerts! In the final module, we'll take you into the world of Raspberry Pi robotics. By the end of it, you'll have built a biped robot that can interact with its environment! 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: Raspberry Pi By Example by Ashwin Pajankar and Arush Kakkar Building a Home Security System with Raspberry Pi by Matthew Pole Raspberry Pi Robotics Essentials by Richard Grimmett Style and approach It's not every day you build a home automation system. It's not every day you build a walking robot. But with this Learning Path you'll do just that. So get started and let this tiny computer expand your imagination.*

*Get an A grade in C As with any major language, mastery of C can take you to some very interesting new places. Almost 50 years after it first appeared, it's still the world's most popular programming language and is used as the basis of global industry's core systems, including operating systems, high-performance graphics applications, and microcontrollers. This means that fluent C users are in big demand at the sharp end in cutting-edge industries—such as gaming, app development, telecommunications, engineering, and even animation—to translate innovative ideas into a smoothly functioning reality. To help you get to where you want to go with C, this 2nd edition of C Programming For Dummies covers everything you need to begin writing programs, guiding you logically through the development cycle: from initial design and testing to deployment and live iteration. By the end you'll be au fait with the do's and don'ts of good clean writing and easily able to produce the basic—and not-so-basic—building blocks of an elegant and efficient source code. Write and compile source code Link code to create the executable program Debug and optimize your code Avoid common mistakes Whatever your destination: tech industry, start-up, or just developing for pleasure at home, this easy-to-follow, informative, and entertaining guide to the C programming language is the fastest and friendliest way to get there!*

***30 BeagleBone Black Projects for the Evil Genius***

***Computational Problems for Physics***

***Birds of Sri Lanka***

***Arduino Robotic Projects***

***Raspberry Pi Projects***

This collection of essays consists of selected papers presented at the 24th IEEE FRUCT conference. It highlights the most pressing research topics in infocommunication technologies, such as challenges in the development of next generation networks, the architectures and design of innovative knowledge-based systems, and innovations in healthcare and eHealth.

This book makes a consolidated guided tour to the world of sociorobots (social or socialized robots). Sociorobots and assistive robots provide entertainment, assistance to the handicapped, companionship to the elderly and health care to autistic children and people with dementia. The book provides, in a fluent educational way, all major concepts, architectures and design methodologies. All types of sociorobots are examined, namely walking anthropomorphic, wheeled anthropomorphic, fixed-place anthropomorphic and zoomorphic sociorobots. The book provides an outline of sociorobot intelligent control architectures, robot learning and human robot interaction.

A compact, easy-to-use bird identification guide for any nature watcher on a visit to Sri Lanka, a rich and satisfying destination for

watching birds with more than 430 species identified on the island. A total of 252 species is described here in detail, from the Black-rumped Flameback to the Ceylon Blue Magpie. All of these birds are clearly illustrated in a collection of specially commissioned colour photographs. With almost 300 full-colour photographs, easy-to-use thumbnail family silhouettes, a regional distribution map and handy tips on the best birding localities. Illustrated with clear colour photography and brief but authoritative descriptions the Pocket Photo Guides highlight the species of birds and animals from each region that the traveller is most likely to see, as well as those that are genuinely endemic (only to be seen in that country or region) or special rarities. The genuine pocket size allow the books to be carried around on trips and excursions and will take up minimal rucksack and suitcase space.

Learn to build amazing robotic projects using the powerful BeagleBone Black. About This Book Push your creativity to the limit through complex, diverse, and fascinating projects Develop applications with the BeagleBone Black and open source Linux software Sharpen your expertise in making sophisticated electronic devices Who This Book Is For This Learning Path is aimed at hobbyists who want to do creative projects that make their life easier and also push the boundaries of what can be done with the BeagleBone Black. This Learning Path's projects are for the aspiring maker, casual programmer, and budding engineer or tinkerer. You'll need some programming knowledge, and experience of working with mechanical systems to get the complete experience from this Learning Path. What You Will Learn Set up and run the BeagleBone Black for the first time Get to know the basics of microcomputing and Linux using the command line and easy kernel mods Develop a simple web interface with a LAMP platform Prepare complex web interfaces in JavaScript and get to know how to stream video data from a webcam Find out how to use a GPS to determine where your sailboat is, and then get the bearing and distance to a new waypoint Use a wind sensor to sail your boat effectively both with and against the wind Build an underwater ROV to explore the underwater world See how to build an autonomous Quadcopter In Detail BeagleBone is a microboard PC that runs Linux. It can connect to the Internet and run OSes such as Android and Ubuntu. You can transform this tiny device into a brain for an embedded application or an endless variety of electronic inventions and prototypes. This Learning Path starts off by teaching you how to program the BeagleBone. You will create introductory projects to get yourselves acquainted with all the nitty gritty. Then we'll focus on a series of projects that are aimed at hobbyists like you and encompass the areas of home automation and robotics. With each project, we'll teach you how to connect several sensors and an actuator to the BeagleBone Black. We'll also create robots for land, sea, and water. Yes, really! The books used in this Learning Path are: BeagleBone Black Cookbook BeagleBone Home Automation Blueprints Mastering BeagleBone Robotics Style and approach This practical guide transforms complex and confusing pieces of technology to become accessible with easy- to-succeed instructions. Through clear, concise examples, you will quickly get to grips with the core concepts needed to develop home automation applications with the BeagleBone Black.

Mastering Beaglebone Robotics

Arduino Robotics

Birds of Northern India

With Guided Solutions Using Python

Building a Home Security System with BeagleBone is a practical, hands-on guide for practical, hands-on people. The book includes step-by-step instructions for assembling your own hardware on professionally manufactured PCB’s and setting up the software on your system. This book is for anyone who is interested in alarm systems and how they work; for hobbyists and basement tinkerers who love to build things. If you want to build the hardware described in this book, you will need some basic soldering skills, but all the parts are of the thru-hole variety and are very easy to put together. When it comes to software, you can just run it as-is, but if you want to modify the code, you will need knowledge of Java and IDEs.

Build a variety of awesome robots that can see, sense, move, and do a lot more using the powerful Robot Operating System About This Book Create and program cool robotic projects using powerful ROS libraries Work through concrete examples that will help you build your own robotic systems of varying complexity levels This book provides relevant and fun-filled examples so you can make your own robots that can run and work Who This Book Is For This book is for robotic enthusiasts and researchers who would like to build robot applications using ROS. If you are looking to explore advanced ROS features in your projects, then this book is for you. Basic knowledge of ROS, GNU/Linux, and programming concepts is assumed. What You Will Learn Create your own self-driving car using ROS Build an intelligent robotic application using deep learning and ROS Master 3D object recognition Control a robot using virtual reality and ROS Build your own AI chatter-bot using ROS Get to know all about the autonomous navigation of robots using ROS Understand face detection and tracking using ROS Get to grips with teleoperating robots using hand gestures Build ROS-based applications using Matlab and Android Build interactive applications using TurtleBot In Detail Robot Operating System is one of the most widely used software frameworks for robotic research and for companies to model, simulate, and prototype robots. Applying your knowledge of ROS to actual robotics is much more difficult than people realize, but this title will give you what you need to create your own robotics in no time! This book is packed with over 14 ROS robotics projects that can be prototyped without requiring a lot of hardware. The book starts with an introduction of ROS and its installation procedure. After discussing the basics, you'll be taken through great projects, such as building a self-driving car, an autonomous mobile robot, and image recognition using deep learning and ROS. You can find ROS robotics applications for beginner, intermediate, and expert levels inside! This book will be the perfect companion for a robotics enthusiast who really wants to do something big in the field. Style and approach This book is packed with fun-filled, end-to-end projects on mobile, armed, and flying robots, and describes the ROS implementation and execution of these models.

Despite being one of the most densely populated countries on Earth, Bangladesh boasts a diverse range of natural habitats, including forests, wetlands and grasslands, and supports a wide range of species including a number of sought after regional specialities. Birds of Bangladesh is the definitive field guide to the rich avifauna of this fascinating and beautiful country. - Covers all 705 species that occur in Bangladesh, including vagrants - 103 superb colour plates, with text on facing pages for quick and easy reference - Concise species accounts describe key identification features, voice, habitats, distribution and status