Arduino Robotic Projects Grimmett Richard

BeagleBone Robotic Projects Richard Grimmett 2017-06-13 Exciting new capabilities to enable even easier DIY robotics with BeagleBone Blue Key Features 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 Book DescriptionBeagleBone 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.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 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.

Building Wireless Sensor Networks Using Arduino Matthijs Kooijman 2015-10-19 Leverage the powerful Arduino and XBee platforms to monitor and control your surroundings Key Features Book DescriptionArduino has been established as the de facto standard microcontroller programming platform, being used for one-off do-it-yourself projects as well as prototypes for actual products. By providing a myriad of libraries, the Arduino community has made it very easy to interact with pretty much any piece of hardware out there. XBee offers a great range of low-power wireless solutions that are easy to work with, by taking all of the complexity of wireless (mesh) networking out of your hands and letting you focus on what to send without worrying about the how. Building wireless sensor networks is cost-effective as well as efficient as it will be done with Arduino support. The book starts with a brief introduction to various wireless protocols, concepts, and the XBee hardware that enables their use. Then the book expands to explain the Arduino boards to you, letting them read and send sensor data, collect that data centrally, and then even control your home from the Internet. Moving further more advanced topics such as interacting through the standard Zigbee Home Automation protocol, or making your application power-efficient are covered. By the end of the book, you will have all the tools needed to build complete, real-world solutions.What you will learn Interact with XBee boards using the XCTU program on Windows, OS X, or Linux Make your Arduino boards communicate wirelessly, using XBee modules in the advanced API mode Centrally collect and store measured sensor data, in the cloud or your own database Connect the coordinator Arduino to the Internet and send data to web services Control your environment automatically, based on sensor input from your network Interact with offtheshelf ZigBee Home Automation devices Make your devices batterypowered and let them sleep to get months or even years of battery life Who this book is for

Learning Javascript Robotics Kassandra Perch 2015-11-25 Design, build, and program your own remarkable robots with JavaScript and open source hardware Key Features Book DescriptionThere has been a rapid rise in the use of JavaScript in recent times in a variety of applications, and JavaScript robotics has seen a rise in popularity too. Johnny-Five is a framework that gives NodeBots a consistent API and platform across several hardware systems. This book walks you through basic robotics projects including the physical hardware builds and the JavaScript code for them. You'll delve into the concepts of Johnny-Five and JS robotics. You'll learn about various components such as Digital GPIO pins, PWM output pins, Sensors, servos, and motors to be used with Johnny-Five along with some advanced components such as I2C, and SPI. You will learn to connect your Johnny-Five robots to internet services and other NodeBots to form networks. By the end of this book, you will have explored the benefits of the Johnny-Five framework and the many devices it unlocks.What you will learn Familiarise yourself with JohnnyFive Read, Eval, and Print Loop (REPL) to modify and debug robotics code in real time Build robots with basic output devices to create projects that light up, make noise, and more Create projects with complex output devices, and employ the JohnnyFive API to simplify the use of components that require complex interfaces, such as I2C Make use of sensors and input devices to allow your robotics projects to survey the world around them and accept input from users Use the Sensor and Motor objects to make it much easier to move your robotics projects Learn about the Animation API that will allow you to program complex movements using timing and key frames Bring in other devices to your JohnnyFive projects, such as USB devices and remotes Connect your JohnnyFive projects to external APIs and create your own Internet of Things! Who this book is for

Raspberry Pi Robotic Projects - Third Edition Richard Grimmett 2016-10-11 Work through a mix of amazing robotic projects using the Raspberry Pi Zero or the Raspberry Pi 3About 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 homeWho This Book Is ForThis 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 distanceIn DetailThis 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 approachThis 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.

BeagleBone Robotic Projects Richard Grimmett 2013-12-26 Developer or hobbyist, you'll love the way this book helps you turn the BeagleBone Black into a working robot. From listening and speaking to seeing and moving, we'll show you how – step by step. Key Features Get to grips with robotic systems. Communicate with your robot and teach it to detect and respond to its environment. Develop walking, rolling, swimming, and flying robots. Book DescriptionThanks to new, inexpensive microcontrollers, robotics has become far more accessible than it was in the past. These microcontrollers provide a whole new set of capabilities to allow even the most inexperienced users to make amazingly complicated projects. Beaglebone 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 to allow 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 will include guidance on what to purchase and how to connect it all successfully,Äìand a primer on programming the BeagleBone Black. Chapter by chapter, we will add additional software functionality available from the open source community, including how to make the system see using a webcam, how to hear using a microphone, and how to speak using a speaker. We then add hardware to make your robots move,Äìincluding wheeled and legged examples,Äìas well as covering how to add sonar sensors to avoid or find objects, plus wireless control to make your robot truly autonomous. Adding GPS allows the robot to find itself. Finally the book covers how to integrate all of this functionality so that it can all work together, before developing the most impressive robotics projects: those that can sail, fly, and explore underwater.What you will learn Unbox, power up, and configure the BeagleBone black with Ubuntu. Install speech recognition software to issue voice commands to your projects. Set up a webcam and a computer vision toolkit for distinguishing objects. Communicate with external motors to enable you robotics projects to move in a variety of ways. Process audio signals like music or other sounds. Add GPS capability to your system so it will know where it is. Use the building blocks you have learned to create complex robotic projects that can combine all of these features and more. Who this book is for This book is for anyone who is curious about using new, low-cost hardware to create robotic projects that 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.

Robotic Game Maker Richard K Perry 2025-12-03 Build Physical Robots That Play Board Games and Integrate with Unity Unlock the exciting world of physical robotics and interactive game development with Robotic Game Maker: Build Physical Robots That Play Board Games and Integrate with Unity. This hands-on guide is designed for hobbyists, makers, and game developers eager to bring their board game ideas to life through step-by-step projects using Arduino and Raspberry Pi. Whether you're a beginner or an experienced coder, this book offers clear, practical instructions that merge robotics, electronics, and Unity game engine integration-empowering you to create intelligent, autonomous robots that can play, strategize, and interact in real time. Harness cutting-edge technology and proven hardware platforms while mastering essential robotics concepts, sensor integration, and game AI. With a strong focus on real-world application, this book bridges the gap between physical computing and digital gameplay, making it a must-have resource for anyone interested in robotics, game design, and embedded systems. Written by Richard K. Perry, a seasoned robotics engineer and game developer with years of industry expertise, this book delivers authoritative, credible knowledge rooted in modern technology trends. Perry's approachable style ensures you grasp complex concepts quickly without unnecessary jargon, saving you time and accelerating your learning curve in an ever-evolving tech landscape. Perfect for makerspaces, STEM enthusiasts, and developers aiming to expand their skills in robotics and Unity, this comprehensive guide will help you stay ahead of emerging trends while building projects that are as fun as they are educational. Discover how to transform simple components into sophisticated game-playing robots, and unlock new creative possibilities in robotics and interactive entertainment.

Raspberry Pi Robotic Projects Richard Grimmett 2016-10-17 Work through a mix of amazing robotic projects using the Raspberry Pi Zero or the Raspberry Pi 3 Key Features 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 Book DescriptionThis 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.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 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.

BeagleBone: Creative Projects for Hobbyists Charles Hamilton 2017-07-20 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 Richard Grimmett 2014-12-22 Key Features Book DescriptionIf 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.What you will learn Power up the BeagleBone Black to develop with both Python and C Control DC motors to guide a tracked robot forward, backward, and side to side Add sonar and infrared sensors to let your robot see its own way Use a USB webcam to have your robot seek out and track colored objects or movements Communicate with the servomotors of a robosailboat using a longrange wireless interface Teach your robosailboat to navigate to a bearing and distance using GPS Connect your BeagleBone Black to a flight controller to guide robots through the air Make your robots autonomous and capable of controlling themselves Who this book is for

Raspberry Pi Robotic Blueprints Richard Grimmett 2015-10-30 Utilize the powerful ingredients of Raspberry Pi to bring to life your amazing robots that can act, draw, and have fun with laser tags Key Features [*]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 Book DescriptionThe 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.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 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.

Intel Galileo Blueprints Marco Schwartz 2015-06-25 Key Features Book DescriptionIf you are an experienced developer using classic Arduino boards and would like to extend your knowledge to the Intel Galileo board and polish your project building skills, this book is for you.What you will learn Monitor data remotely using the onboard Ethernet connection Control outputs using the Galileo board and control the board remotely Store and plot monitored data in the cloud Access your Intel Galileo projects from anywhere in the world Automate your garden and monitor it from the cloud Create a whole home automation system using the Galileo board as the hub Build a mobile robot based on your Galileo board Who this book is for If you are an experienced developer using classic Arduino boards and would like to extend your knowledge to the Intel Galileo board and polish your project building skills, this book is for you.

Raspberry Pi Robotics Essentials Richard Grimmett 2015-06-19 If you are a programmer with an interest in building advanced robotics projects using inexpensive hardware and open source software, then this book is for you. Some experience with computer programming and implementing simple mechanical systems is required.

Arduino Robotic Projects Richard Grimmett 2014-08-14 Key Features Book DescriptionThis 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.What you will learn Acquaint yourself with the many different kinds of Arduinos to choose the right Arduino for your application Start to use your Arduino by unboxing, powering-up, and configuring the device Tweak Arduino to make wheels, or legs, move so that your robot can be mobile Add GPS to your projects so your robots can know where they are Use RF signals to control your robot remotely Connect your robot to a display so you can see what it is thinking Build more complex robots that can move, swim, or fly Who this book is for

Arduino Robotic Projects Richard Grimmett 2014-08-14 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 Richard Grimmett 2015-02-24 Key Features Book DescriptionThis 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.What you will learn Access the Linux system that is the basis for Galileo to add even more complex hardware and software Install and use the software development environment and connect to the Galileo and develop programs for it Add a simple display to the Galileo Connect external HW to the GPIO pins Control DC motors with the Galileo Add sensors to a Galileobased project Access your Galileo wirelessly Understand the basics of sketches, include files, and HW support Who this book is for 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.

Getting Started with Raspberry Pi Zero Richard Grimmett 2016-03-30 Get started with the smallest, cheapest, and highest-utility Pi ever—Raspberry Pi Zero Key Features [*] 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 Book DescriptionRaspberry 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.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 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.

Raspberry Pi: Amazing Projects from Scratch Ashwin Pajankar 2016-09-26 Explore the powers of Raspberry Pi and build your very own projects right out of the boxAbout 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 ForWant 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 robotIn DetailLooking 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 GrimmettStyle and approachIt'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.
Arduino Robotics John-David Warren 2011-10-08 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.
Learning Robotics using Python Lentin Joseph 2015-05-27 Key Features Book DescriptionIf you are an engineer, a researcher, or a hobbyist, and you are interested in robotics and want to build your own robot, this book is for you. Readers are assumed to be new to robotics but should have experience with Python.What you will learn Understand the core concepts and terminologies of robotics Create 2D and 3D drawings of robots using freeware such as LibreCAD and Blender Simulate your robot using ROS and Gazebo Build robot hardware from the requirements Explore a diverse range of actuators and its interfacing Interface various robotic sensors to robots Set up and program OpenCV, OpenNI, and PCL to process 2D/3D visual data Learn speech processing and synthesis using Python Apply artificial intelligence to robots using Python Build a robot control GUI using Qt and Python Calibration and testing of robot Who this book is for If you are an engineer, a researcher, or a hobbyist, and you are interested in robotics and want to build your own robot, this book is for you. Readers are assumed to be new to robotics but should have experience with Python.
Emerging Topics and Questions in Infocommunication Technologies Sergey Balandin 2020-06-16 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.

Arduino Robotic Projects Grimmett Richard

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