
Arduino And Kinect Projects

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Arduino and Scilab based Projects
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DILLON CARTER

Making Things See Microsoft Press

Arduino and Scilab based Projects provides information ranging from the basics to advanced knowledge of Arduino and its interfacing with input/output devices (display devices, actuators, sensors), communication modules (RF modem, Zigbee) and Scilab. It also provides embedded system based on Arduino with simulation, programming and interfacing with Scilab, Arduino interfacing with Scilab with and without Arduino 1.1 packages. Chapters are arranged in an easy-to-understand sequence that enhances the learning experience for readers. Descriptions of real time project prototypes with programming and simulation of Arduino and Scilab.

Begin to Code with C# Microsoft Press

Create your own innovative applications in computer vision, game design, music, robotics, and other areas by taking full advantage of Kinect's extensive interactive, multi-media platform. With this book, you get a step-by-step walkthrough of the best techniques and tools to come out of the OpenKinect project, the largest and most active Kinect hacking community. Learn dozens of hacks for building interfaces that respond to body movements, gestures, and voice, using open source toolkits such as openFrameworks, the Processing IDE, and OpenKinect driver library. Whether you're an artist, designer, researcher, or hobbyist, this book will give you a running start with Kinect. Set up a development environment in Windows 7, Mac OSX, or Ubuntu Build special effects apps with tools such as Synapse and Cinder Create gestural interfaces to integrate and control digital music components Capture the realistic motions of a 3D model with NI mate, Blender, and Animata Design gesture-based games with the ZigFu SDK Recreate the dimensions of any room in realtime, using RGBDemo Use gestures to navigate robots and control PC interfaces

Technological Paradigms and Digital Eras "O'Reilly Media, Inc."

With Arduino, you can build any hardware project you can

imagine. This open-source platform is designed to help total beginners explore electronics, and with its easy-to-learn programming language, you can collect data about the world around you to make something truly interactive. The Arduino Inventor's Guide opens with an electronics primer filled with essential background knowledge for your DIY journey. From there, you'll learn your way around the Arduino through a classic hardware entry point—blinking LEDs. Over the course of the book, 11 hands-on projects will teach you how to: -Build a stop light with LEDs -Display the volume in a room on a warning dial -Design and build a desktop fan -Create a robot that draws with a motor and pens -Create a servo-controlled balance beam -Build your own playable mini piano -Make a drag race timer to race toy cars against your friends Each project focuses on a new set of skills, including breadboarding circuits; reading digital and analog inputs; reading magnetic, temperature, and other sensors; controlling servos and motors; and talking to your computer and the Web with an Arduino. At the end of every project, you'll also find tips on how to use it and how to mod it with additional hardware or code. What are you waiting for? Start making, and learn the skills you need to own your technology! Uses the Arduino Uno board or SparkFun RedBoard

Arduino Robotic Projects No Starch Press

Hacking the Kinect is the technogeek's guide to developing software and creating projects involving the groundbreaking volumetric sensor known as the Microsoft Kinect. Microsoft's release of the Kinect in the fall of 2010 startled the technology world by providing a low-cost sensor that can detect and track body movement in three-dimensional space. The Kinect set new records for the fastest-selling gadget of all time. It has been adopted worldwide by hobbyists, robotics enthusiasts, artists, and even some entrepreneurs hoping to build business around the technology. Hacking the Kinect introduces you to programming for the Kinect. You'll learn to set up a software environment, stream data from the Kinect, and write code to interpret that data. The progression of hands-on projects in the book leads you even deeper into an understanding of how the device functions and how you can apply it to create fun and educational projects.

Who knows? You might even come up with a business idea.

Provides an excellent source of fun and educational projects for a tech-savvy parent to pursue with a son or daughter Leads you progressively from making your very first connection to the Kinect through mastery of its full feature set Shows how to interpret the Kinect data stream in order to drive your own software and hardware applications, including robotics applications

Make: Arduino Bots and Gadgets BPB Publications

Provides information on creating a variety of gadgets and controllers using Arduino.

Arduino Applied Springer

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.

Arduino BLINK Blueprints Packt Publishing Ltd

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.

The Arduino Inventor's Guide Maker Media, Inc.

This companion book to MakerShed's Ultimate Arduino Microcontroller Pack provides 26 clearly explained projects that you can build with this top-selling kit right away--including multicolor flashing lights, timers, tools for testing circuits, sound effects, motor control, and sensor devices. With the Ultimate Arduino Microcontroller Pack, you'll find everything from common components such as resistors and capacitors to specialized sensors and actuators like force-sensing resistors and motors. The kit also features the Arduino Uno Microcontroller and a MakerShield, the definitive prototyping shield for Arduino. Build 26 cool mini Arduino projects and gadgets Work on projects that are both instructive and have practical application Get circuit diagrams and detailed instructions for building each project Understand circuit design and simulation with easy-to-use tools

Advances in Computational Intelligence Bentham Science Publishers

Become a C# programmer—and have fun doing it! Start writing software that solves real problems, even if you have absolutely no programming experience! This friendly, easy, full-color book puts you in total control of your own learning, empowering you to build unique and useful programs. Microsoft has completely reinvented

the beginning programmer's tutorial, reflecting deep research into how today's beginners learn, and why other books fall short. **Begin to Code with C#** is packed with innovations, from its "Snaps" prebuilt operations to its "Make Something Happen" projects. Whether you're a total beginner or you've tried before, this guide will put the power, excitement, and fun of programming where it belongs: in your hands! Easy, friendly, and you're in control! Learn how to... • Get the free tools you need to create modern programs • Work with 150 sample programs that illustrate important concepts • Use the sample programs as starting points for your own programs • Explore exactly what happens when a program runs • Approach program development with a professional perspective • Use powerful productivity shortcuts built into Microsoft Visual Studio • Master classes, interfaces, methods, and other essential concepts • Organize programs so they're easy to construct and improve • Capture and respond to user input • Store and manipulate many types of real-world data • Create interactive games that are fun to play • Build modern interfaces your users will love • Test and debug your code—and avoid problems in the first place

Arduino in Action Packt Publishing Ltd

This book is divided into projects that are explained in a step-by-step format, with practical instructions that are easy to follow. If you want to build your own home automation systems wirelessly using the Arduino platform, this is the book for you. You will need to have some basic experience in Arduino and general programming languages, such as C and C++ to understand the projects in this book.

Arduino Computer Vision Programming Springer

Make cool stuff. If you're a designer or artist without a lot of programming experience, this book will teach you to work with 2D and 3D graphics, sound, physical interaction, and electronic circuitry to create all sorts of interesting and compelling experiences -- online and off. **Programming Interactivity** explains programming and electrical engineering basics, and introduces three freely available tools created specifically for artists and designers: Processing, a Java-based programming language and environment for building projects on the desktop, Web, or mobile phones Arduino, a system that integrates a microcomputer prototyping board, IDE, and programming language for creating your own hardware and controls OpenFrameworks, a coding

framework simplified for designers and artists, using the powerful C++ programming language BTW, you don't have to wait until you finish the book to actually make something. You'll get working code samples you can use right away, along with the background and technical information you need to design, program, build, and troubleshoot your own projects. The cutting edge design techniques and discussions with leading artists and designers will give you the tools and inspiration to let your imagination take flight.

Programming Interactivity Apress

This book features a selection of papers presented at the First IFIP WG 12.6 International Workshop on Artificial Intelligence for Knowledge Management, AI4KM 2012, held in Montpellier, France, in August 2012, in conjunction with the 20th European Conference on Artificial Intelligence, ECAI 2012. The 11 revised and extended papers were carefully reviewed and selected for inclusion in this volume. They present new research and innovative aspects in the field of knowledge management.

Arduino Project Handbook "O'Reilly Media, Inc."

Description - This book is written in such a way that the concepts are explained in details, giving adequate emphasis on circuits and code examples. To make the topics more comprehensive circuit diagrams and code snippets are furnished extensively throughout the book. The book is designed in such a way to make it reader focused and contains latest topics, circuit diagrams, code examples & references. The book features the most current and popular Arduino boards. It teaches novice beginners how to create interesting electronics projects with Arduino platform and ecosystem. It also benefits the professional level programmers to get shared with Arduino platform & ecosystem. Key features: A* Comprehensive coverage of various aspects of Aduino basics, ecosystem and Arduino IDE. A* Covers Arduino Uno, Arduino Nano and introduces to the latest Arduino Tian which runs Linux. A* Simple language, crystal clear approach and straight forward comprehensible presentation. A* Adopting user-friendly style for explanation of circuits and code examples. A* Illustrated with circuit diagrams, screenshots and photographs. A* CD contains Circuit diagrams and code. Table of Contents 1) Introduction to Arduino 2) Getting Started 3)Writing Programs for Arduino 4) LED Programming 5)Programming with Push Buttons 6) Analog Inputs and Various Buses 7) Working with Displays 8) Arrays, strings,

and memory 9)Working with Sound and Sensors 10) More Sensors 11)Arduino PWM 12)Matrix Keypad and Security System 13)SD Card Module, IR Receiver, and Relay 14)Arduino Nano and Arduino Tian 15)Miscellaneous Topics

Learn to Program with Scratch No Starch Press

A quick and comprehensive tutorial book for media designers to jump-start interactive multimedia production with computer graphics, digital audio, digital video, and interactivity, using the Pure Data graphical programming environment. An introductory book on multimedia programming for media artists/designers who like to work on interactivity in their projects, digital art/design students who like to learn the first multimedia programming technique, and audio-visual performers who like to customize their performance sets

[ARDUINO MADE SIMPLE](#) Springer

A guide to creating computer applications using Microsoft Kinect features instructions on using the device with different operating systems, using 3D scanning technology, and building robot arms, all using open source programming language.

Arduino Projects No Starch Press

Get the most out of your Arduino to develop exciting and creative LED-based projects About This Book Learn to control TV backlighting using an IR remote Get introduced to sound visualization so you are able to use sound-controlled LEDs Build an exciting persistence of vision wand Who This Book Is For Anyone with a basic computer knowledge should be able to get the most out of this book. Although familiarity with some of the electronics would be helpful, it is not a must. What You Will Learn Set up Arduino boards to run a basic 'Hello World' program Develop a mood lamp and expand it to become an LED night lamp Control TV backlight color and intensity using an IR remote Develop an IR-controlled 4*4 LED cube Use sound visualization to develop a sound-controlled LED Christmas tree See a fun way to create interesting long exposure photographs and light displays using persistence of vision (POV) wands In Detail Arduino is an open-source prototyping platform based on easy-to-use hardware and software. Arduino has been used in thousands of different projects and applications by a wide range of programmers and artists, and their contributions have added up to an incredible amount of accessible knowledge that can be of great help to novices and experts alike. Want to build exciting LED projects

with Arduino? This book will be your companion to bring out the creative genius in you. To begin with, you will get introduced to the maker movement and the open source hardware development Arduino boards. You will then move on to develop a mood lamp and a remote-controlled TV backlight. As you progress through the book, you will develop an LED cube and will learn to use sound visualization to develop a sound-controlled LED Christmas tree. You will then move on to build a persistence of vision wand. At the end of each chapter, you'll see some common problems, their solutions, and some workarounds. Style and approach This book takes a project based approach to building LED-based projects with Arduino.

ARDUINO PROJECT FOR ENGINEERS Simon and Schuster

The 3-volume set LNCS 8510, 8511 and 8512 constitutes the refereed proceedings of the 16th International Conference on Human-Computer Interaction, HCI 2014, held in Heraklion, Crete, Greece in June 2014. The total of 1476 papers and 220 posters presented at the HCI 2014 conferences was carefully reviewed and selected from 4766 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers thoroughly cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas.

Hacking the Kinect The Rosen Publishing Group, Inc

Want to build your own robots, turn your ideas into prototypes, control devices with a computer, or make your own cell phone applications? It's a snap with this book and the Arduino open source electronic prototyping platform. Get started with six fun projects and achieve impressive results quickly. Gain the know-how and experience to invent your own cool gadgets. With Arduino, building your own embedded gadgets is easy, even for beginners. Embedded systems are everywhere—inside cars, children's toys, and mobile phones. This book will teach you the basics of embedded systems and help you build your first gadget in just a few days. Each learn-as-you-build project that follows will add to your knowledge and skills. Experiment with Arduino, the popular microcontroller board Build robots and electronic projects with easy-to-follow instructions Turn your ideas into working physical prototypes Use Android phones as remote controls in your projects Work with an uncomplicated programming language

created for artists, designers, and hobbyists Get everyone involved, with projects that even beginners can build

Kinect Hacks "O'Reilly Media, Inc."

Scratch is a fun, free, beginner-friendly programming environment where you connect blocks of code to build programs. While most famously used to introduce kids to programming, Scratch can make computer science approachable for people of any age. Rather than type countless lines of code in a cryptic programming language, why not use colorful command blocks and cartoon sprites to create powerful scripts? In *Learn to Program with Scratch*, author Majed Marji uses Scratch to explain the concepts essential to solving real-world programming problems. The labeled, color-coded blocks plainly show each logical step in a given script, and with a single click, you can even test any part of your script to check your logic. You'll learn how to: -Harness the power of repeat loops and recursion -Use if/else statements and logical operators to make decisions -Store data in variables and lists to use later in your program -Read, store, and manipulate user input -Implement key computer science algorithms like a linear search and bubble sort Hands-on projects will challenge you to create an Ohm's law simulator, draw intricate patterns, program sprites to mimic line-following robots, create arcade-style games, and more! Each chapter is packed with detailed explanations, annotated illustrations, guided examples, lots of color, and plenty of exercises to help the lessons stick. *Learn to Program with Scratch* is the perfect place to start your computer science journey, painlessly. Uses Scratch 2

Multimedia Programming with Pure Data "O'Reilly Media, Inc."

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.

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