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# Getting Started With Sensors Maker Shed

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Educational Robotics in the Context of the Maker Movement

Getting to Know Arduino

Connecting Sensors and Microcontrollers to the Cloud

Makers

The Maker's Guide to the Zombie Apocalypse

Chemical Sensor Technology

Learn Electronics with Arduino

Designing Embedded Systems with Arduino

TinyML

A Hands-On Primer for Monitoring the Real World with Arduino and Raspberry Pi

The New Industrial Revolution

Getting Started with Processing.py

Sensors for Mechatronics

Arduino Project Handbook

Getting Started with Sensors

Beginning Sensor Networks with Arduino and Raspberry Pi

Getting Started with the MSP430 Launchpad

Machine Learning with TensorFlow Lite on Arduino and Ultra-Low-Power Microcontrollers

IoT Development for ESP32 and ESP8266 with JavaScript

Building NodeBots with Johnny-Five, Raspberry Pi, Arduino, and BeagleBone

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Using Sensors, Networks, and Arduino to see,  
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Getting Started with Soldering  
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Educational Robotics in

the Context of the  
Maker Movement  
Getting Started with  
Sensors Measure the  
World with Electronics,  
Arduino, and Raspberry  
Pi

This book introduces readers to building wearable electronics projects using Adafruit's tiny FLORA board: at 4.4 grams, and only 1.75 inches in diameter, and featuring Arduino compatibility, it's the most beginner-friendly way to create wearable projects. This book shows you how to plan your wearable circuits, sew with electronics, and write programs that run on the FLORA to control the electronics. The FLORA family includes an assortment of sensors, as well as RGB LEDs that let you add lighting to your

wearable projects.

### **Getting to Know**

**Arduino** Elsevier  
FREE download!  
Preview five exclusive projects from brand-new renowned TAB Electronics books author Simon Monk! Please enjoy chapter samples from 5 Simon Monk TAB books, including the latest edition of Practical Electronics for Inventors. This latest edition will help you advance your electronics knowledge and gain the skills necessary to develop and construct your own functioning gadgets. Make great stuff with TAB Electronics books. TAB Electronics an imprint of McGraw-Hill Education is a leading publisher of do-it-yourself technology books for makers electronics hobbyists

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**Connecting Sensors and Microcontrollers to the Cloud** No Starch Press  
 This book is your introduction to physical computing with the Arduino microcontroller platform. No prior experience is required, not even an understanding of basic electronics. With color illustrations, easy-to-follow explanations, and step-by-step instructions, the book

takes the beginner from building simple circuits on a breadboard to setting up the Arduino IDE and downloading and writing sketches to run on the Arduino. Readers will be introduced to basic electronics theory and programming concepts, as well as to digital and analog inputs and outputs. Throughout the book, debugging practices are highlighted, so novices will know what to do if their circuits or their code doesn't work for the current project and those that they embark on later for themselves. After completing the projects in this book, readers will have a firm basis for building their own projects with the Arduino. Written for absolute beginners

with no prior knowledge of electronics or programming Filled with detailed full-color illustrations that make concepts and procedures easy to follow An accessible introduction to microcontrollers and physical computing Step-by-step instructions for projects that teach fundamental skills Includes a variety of Arduino-based projects using digital and analog input and output

*Makers* Maker Media, Inc.

Make microcontrollers, PCs, servers, and smartphones talk to each other. Building electronic projects that interact with the physical world is good fun. But when the devices you've built start to talk to each

other, things really get interesting. With 33 easy-to-build projects, *Making Things Talk* shows you how to get your gadgets to communicate with you and your environment. It's perfect for people with little technical training but a lot of interest. Maybe you're a science teacher who wants to show students how to monitor the weather in several locations at once. Or a sculptor looking to stage a room of choreographed mechanical sculptures. In this expanded edition, you'll learn how to form networks of smart devices that share data and respond to commands. Call your home thermostat with a smartphone and change the temperature. Create

your own game controllers that communicate over a network. Use ZigBee, Bluetooth, Infrared, and plain old radio to transmit sensor data wirelessly. Work with Arduino 1.0, Processing, and PHP—three easy-to-use, open source environments. Write programs to send data across the Internet, based on physical activity in your home, office, or backyard. Whether you want to connect simple home sensors to the Internet, or create a device that can interact wirelessly with other gadgets, this book explains exactly what you need. [The Maker's Guide to the Zombie Apocalypse](#) Apress  
JavaScript Robotics is on the rise. Rick Waldron, the lead

author of this book and creator of the Johnny-Five platform, is at the forefront of this movement. Johnny-Five is an open source JavaScript Arduino programming framework for robotics. This book brings together fifteen innovative programmers, each creating a unique Johnny-Five robot step-by-step, and offering tips and tricks along the way. Experience with JavaScript is a prerequisite.

*Chemical Sensor Technology* Springer Nature

Build sensor networks with Python and MicroPython using XBee radio modules, Raspberry Pi, and Arduino boards. This revised and updated edition will put all of these together to form

a sensor network, and show you how to turn your Raspberry Pi into a MySQL database server to store your sensor data! You'll review the different types of sensors and sensor networks, along with new technology, including how to build a simple XBee network. You'll then walk through building an sensor nodes on the XBee, Raspberry Pi, and Arduino, and also learn how to collect data from multiple sensor nodes. The book also explores different ways to store sensor data, including writing to an SD card, sending data to the cloud, and setting up a Raspberry Pi MySQL server to host your data. You'll even learn how to connect to and interact with a MySQL database server

directly from an Arduino! Finally you'll see how to put it all together by connecting your sensor nodes to your new Raspberry Pi database server. If you want to see how well XBee, Raspberry Pi, and Arduino can get along, especially to create a sensor network, then *Beginning Sensor Networks with XBee, Raspberry Pi, and Arduino* is just the book you need. What You'll Learn Code your sensor nodes with Python and MicroPython Work with new XBee 3 modules Host your data on Raspberry Pi Get started with MySQL Create sophisticated sensor networks Who This Book Is For Those interested in building or experimenting with sensor networks and

IoT solutions, including those with little or no programming experience. A secondary target includes readers interested in using XBee modules with Raspberry Pi and Arduino, those interested in controlling XBee modules with MicroPython. [Learn Electronics with Arduino](#) Elsevier Getting Started with Sensors Measure the World with Electronics, Arduino, and Raspberry Pi Maker Media, Inc. [Designing Embedded Systems with Arduino](#) O'Reilly Media Arduino Project Handbook is a beginner-friendly collection of electronics projects using the low-cost Arduino board. With just a handful of components, an



Arduino, and a computer, you'll learn to build and program everything from light shows to arcade games to an ultrasonic security system. First you'll get set up with an introduction to the Arduino and valuable advice on tools and components. Then you can work through the book in order or just jump to projects that catch your eye. Each project includes simple instructions, colorful photos and circuit diagrams, and all necessary code. *Arduino Project Handbook* is a fast and fun way to get started with microcontrollers that's perfect for beginners, hobbyists, parents, and educators. Uses the Arduino Uno board. [TinyML](#) Maker Media, Inc.

Electronic gadgets are fun to play with, but they're even more fun to build! Students will unlock the mysteries of electronics, sensors, and LEDs with this book as it provides both technical information and step-by-step projects. Clubs, online communities, and additional resources are also discussed to help ambitious makers progress to the next level in their newfound hobby.

**A Hands-On Primer  
for Monitoring the  
Real World with  
Arduino and  
Raspberry Pi**

Academic Press  
Build your own Internet of Things (IoT) projects for prototyping and proof-of-concept purposes. This book contains the tools needed to build a

prototype of your design, sense the environment, communicate with the Internet (over the Internet and Machine to Machine communications) and display the results. Raspberry Pi IoT Projects provides several IoT projects and designs are shown from the start to the finish including an IoT Heartbeat Monitor, an IoT Swarm, IoT Solar Powered Weather Station, an IoT iBeacon Application and a RFID (Radio Frequency Identification) IoT Inventory Tracking System. The software is presented as reusable libraries, primarily in Python and C with full source code available. Raspberry Pi IoT Projects: Prototyping Experiments for

Makers is also a valuable learning resource for classrooms and learning labs. What You'll Learn build IOT projects with the Raspberry Pi Talk to sensors with the Raspberry Pi Use iBeacons with the IOT Raspberry Pi Communicate your IOT data to the Internet Build security into your IOT device Who This Book Is For Primary audience are those with some technical background, but not necessarily engineers. It will also appeal to technical people wanting to learn about the Raspberry Pi in a project-oriented method.

**The New Industrial Revolution** Apress Features over fifty sensor-based projects that use either Arduino

or Raspberry Pi, including a personal breathalyzer and alcohol sensor, an e-mail smoke alarm, and a graphical sound visualizer.

*Getting Started with Processing.py* "O'Reilly Media, Inc."

Deep learning networks are getting smaller. Much smaller. The Google Assistant team can detect words with a model just 14 kilobytes in size—small enough to run on a microcontroller. With this practical book you'll enter the field of TinyML, where deep learning and embedded systems combine to make astounding things possible with tiny devices. Pete Warden and Daniel Situnayake explain how you can train models small enough to fit into any

environment. Ideal for software and hardware developers who want to build embedded systems using machine learning, this guide walks you through creating a series of TinyML projects, step-by-step. No machine learning or microcontroller experience is necessary. Build a speech recognizer, a camera that detects people, and a magic wand that responds to gestures Work with Arduino and ultra-low-power microcontrollers Learn the essentials of ML and how to train your own models Train models to understand audio, image, and accelerometer data Explore TensorFlow Lite for Microcontrollers, Google's toolkit for TinyML Debug

applications and provide safeguards for privacy and security. Optimize latency, energy usage, and model and binary size.

Sensors for Mechatronics Newnes

What is the Internet of Things? It's billions of embedded computers, sensors, and actuators all connected online. If you have basic programming skills, you can use these powerful little devices to create a variety of useful systems—such as a device that waters plants when the soil becomes dry. This hands-on guide shows you how to start building your own fun and fascinating projects. Learn to program embedded devices using the .NET Micro Framework and the Netduino Plus board. Then connect

your devices to the Internet with Pachube, a cloud platform for sharing real-time sensor data. All you need is a Netduino Plus, a USB cable, a couple of sensors, an Ethernet connection to the Internet—and your imagination. Develop programs with simple outputs (actuators) and inputs (sensors) Learn about the Internet of Things and the Web of Things Build client programs that push sensor readings from a device to a web service Create server programs that allow you to control a device over the Web Get the .NET classes and methods needed to implement all of the book's examples

**Arduino Project Handbook** Maker Media, Inc.

An investigation of

how-to guides for sensor technologies. Sensors are increasingly common within citizen-sensing and DIY projects, but these devices often require the use of a how-to guide. From online instructional videos for troubleshooting sensor installations to handbooks for using and abusing the Internet of Things, the how-to genres and formats of digital instruction continue to expand and develop. As the how-to proliferates, and instructions unfold through multiple aspects of technoscientific practices, Jennifer Gabrys asks why the how-to has become one of the prevailing genres of the digital. *How to Do Things with*

*Sensors* explores the ways in which things are made do-able with and through sensors and further considers how worlds are made sense-able and actionable through the instructional mode of citizen-sensing projects. Forerunners: *Ideas First Short* books of thought-in-process scholarship, where intense analysis, questioning, and speculation take the lead. [Getting Started with Sensors](#) Apress *Beginning Sensor Networks with Arduino and Raspberry Pi* teaches you how to build sensor networks with Arduino, Raspberry Pi, and XBee radio modules, and even shows you how to turn your Raspberry Pi into a MySQL database server to store your

sensor data! First you'll learn about the different types of sensors and sensor networks, including how to build a simple XBee network. Then you'll walk through building an Arduino-based temperature sensor and data collector, followed by building a Raspberry Pi-based sensor node. Next you'll learn different ways to store sensor data, including writing to an SD card, sending data to the cloud, and setting up a Raspberry Pi MySQL server to host your data. You even learn how to connect to and interact with a MySQL database server directly from an Arduino! Finally you'll learn how to put it all together by connecting your Arduino sensor node to your new

Raspberry Pi database server. If you want to see how well Arduino and Raspberry Pi can get along, especially to create a sensor network, then *Beginning Sensor Networks with Arduino and Raspberry Pi* is just the book you need.

**Beginning Sensor Networks with Arduino and Raspberry Pi** Maker Media, Inc.

Take a deep dive into the concepts of machine learning as they apply to contemporary business and management. You will learn how machine learning techniques are used to solve fundamental and complex problems in society and industry. *Machine Learning for Decision Makers* serves as an excellent resource for

establishing the relationship of machine learning with IoT, big data, and cognitive and cloud computing to give you an overview of how these modern areas of computing relate to each other. This book introduces a collection of the most important concepts of machine learning and sets them in context with other vital technologies that decision makers need to know about. These concepts span the process from envisioning the problem to applying machine-learning techniques to your particular situation. This discussion also provides an insight to help deploy the results to improve decision-making. The book uses case studies and jargon busting to help

you grasp the theory of machine learning quickly. You'll soon gain the big picture of machine learning and how it fits with other cutting-edge IT services. This knowledge will give you confidence in your decisions for the future of your business. What You Will Learn Discover the machine learning, big data, and cloud and cognitive computing technology stack Gain insights into machine learning concepts and practices Understand business and enterprise decision-making using machine learning Absorb machine-learning best practices Who This Book Is For Managers tasked with making key decisions who want to learn how and when machine learning and related

technologies can help them.

Getting Started with the MSP430 Launchpad  
Springer

This ultimate guide for tech makers covers everything from hand tools to robots plus essential techniques for completing almost any DIY project.

Makers, get ready: This is your must-have guide to taking your DIY projects to the next level. Legendary fabricator and alternative engineer Chris Hackett teams up with the editors of Popular Science to offer detailed instruction on everything from basic wood- and metalworking skills to 3D printing and laser-cutting wizardry. Hackett also explains the entrepreneurial and crowd-sourcing

tactics needed to transform your back-of-the-envelope idea into a gleaming finished product. In *The Big Book of Maker Skills*, readers learn tried-and-true techniques from the shop classes of yore—how to use a metal lathe, or pick the perfect drill bit or saw—and get introduced to a whole new world of modern manufacturing technologies, like using CAD software, printing circuits, and more. Step-by-step illustrations, helpful diagrams, and exceptional photography make this book an easy-to-follow guide to getting your project done.

*Machine Learning with TensorFlow Lite on Arduino and Ultra-Low-Power Microcontrollers*  
Maker Media, Inc.



What can you do with the Raspberry Pi, a \$35 computer the size of a credit card? All sorts of things! If you're learning how to program, or looking to build new electronic projects, this hands-on guide will show you just how valuable this flexible little platform can be. This book takes you step-by-step through many fun and educational possibilities. Take advantage of several preloaded programming languages. Use the Raspberry Pi with Arduino. Create Internet-connected projects. Play with multimedia. With Raspberry Pi, you can do all of this and more. Get acquainted with hardware features on the Pi's board. Learn enough Linux to move

around the operating system. Pick up the basics of Python and Scratch—and start programming. Draw graphics, play sounds, and handle mouse events with the Pygame framework. Use the Pi's input and output pins to do some hardware hacking. Discover how Arduino and the Raspberry Pi complement each other. Integrate USB webcams and other peripherals into your projects. Create your own Pi-based web server with Python.

**IoT Development for ESP32 and ESP8266 with JavaScript** The Rosen Publishing Group, Inc

Arduino is the open-source electronics prototyping platform that's taken the design and hobbyist world by storm. This thorough

introduction, updated for Arduino 1.0, gives you lots of ideas for projects and helps you work with them right away. From getting organized to putting the final touches on your prototype, all the information you need is here! Inside, you'll learn about: Interaction design and physical computing The Arduino hardware and software development environment Basics of electricity and electronics Prototyping on a solderless breadboard Drawing a schematic diagram Getting started with Arduino is a snap. To use the introductory examples in this guide, all you need an Arduino Uno or earlier model, along with USB A-B cable and an LED. The easy-to-use Arduino development

environment is free to download. Join hundreds of thousands of hobbyists who have discovered this incredible (and educational) platform. Written by the co-founder of the Arduino project, *Getting Started with Arduino* gets you in on all the fun! *Building NodeBots with Johnny-Five, Raspberry Pi, Arduino, and BeagleBone Apress* This book gathers papers presented at the International Conference "Educational Robotics in the Maker Era - EDUROBOTICS 2018", held in Rome, Italy, on October 11, 2018. The respective chapters explore the connection between the Maker Movement on the one hand, and Educational Robotics, which mainly revolves around the

constructivist and constructionist pedagogy, on the other. They cover a broad range of topics relevant for teacher education and for designing activities for children and youth, with an emphasis on using modern low-cost technologies (including block-based programming environments, Do-It-Yourself electronics, 3D printed artifacts, intelligent distributed systems, IoT technology and gamification) in formal and informal education settings. The twenty contributions collected

here will introduce researchers and practitioners to the latest advances in educational robotics, with a focus on science, technology, engineering, arts and mathematics (STEAM) education. Teachers and educators at all levels will find valuable insights and inspirations into how educational robotics can promote technological interest and 21st century skills – e.g. creativity, critical thinking, teamwork, and problem-solving – with a special emphasis on new making technologies.

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