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ISBN	9781484213599 1484213599
Edizione	[3rd ed. 2015.]
Descrizione fisica	1 online resource (472 p.)
Collana	Technology in action
Disciplina	004
Soggetti	Computer input-output equipment Computer hardware Hardware and Maker Computer Hardware
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Contents at a Glance; Contents; About the Author; Acknowledgments; Introduction; Chapter 1: Welcome Robot Inventor!; Four Disciplines; Anatomy of a Homemade Robot; Brains; Electrical Power ; Power Source; Power Regulation; On/Off Switch ; Sensors ; Pushbuttons ; Action and Feedback; Movement ; Motor Controller ; Indicator Lights ; Miscellaneous Components ; Body; Aesthetics ; Building Up; Taking Small Bites; Making Modules ; Keeping It Fun and Keeping It Light; Finding Camaraderie and Support; Onward and Upward; Chapter 2: Where to Obtain Tools and Parts Ordering Free Information Discovering Hidden Messages; Considering Columns; Counting Parts; Comparing Prices; Saving Money ; Chapter 3: Safety; Benefiting from Age and Experience; Following Instructions ; Reading Chemical Labels ; Donning Safety Glasses; Hanging Glasses and Placing Them Face Up; Wearing Other Safety Clothes; Insuring Adequate Ventilation; Storing Properly; Talking About Your Activities, Materials, and Tools; Washing Before Eating; Avoiding Nasty Elements; Lead; Mercury ; Cadmium ; Purchasing Safer Parts Labeled RoHS; Shocking; AC vs. DC Using Rechargeable Batteries and Professional Transformers Connecting Through Circuit Breakers and GFCI Outlets; Saving the

Ground Prong; Disconnecting Power; Steering Clear of Dangerous Robots; Sizing Up Motors; Lighting Up ; Staying Rested and Level-Headed; Chapter 4: Digital Multimeter; Must-Have Features; Digital; Digits ; DC Voltage ; DC Current ; Resistance ; Probes or Leads ; Overload/Fuse Protection ; Nice-To-Have Features; Capacitance ; Diode ; Continuity ; Frequency ; Duty Cycle ; Autoranging ; Auto Power Off ; Transistor ; Dual Display ; Maximum; Minimum
Stand Optional Features; Inductance ; Data Interface ; Scope; Backlight; Stopwatch/Single Pulse Width ; Temperature ; Sound ; Count; Bar Graph; Data Hold; Data Auto; High/Low/Logic; Memory; Relative; Offset; Limit Testing/Compare; Holster or Rubber Boot ; AC Features; AC Voltage ; True RMS ; AC Current ; Obtaining Hook Probe Adaptors; Comparing Actual Multimeters; Understanding the Features of a Low-End Multimeter; Understanding the Features of a Mid-Range Multimeter; Understanding the Features of a Higher-End Multimeter; Comparing Prices with Features
Examining Other Meters Do Not Proceed Without a Meter; Chapter 5: Numbers and Units; Choosing the Metric System ; Reducing Powers of a Thousand ; M & m ; Alternative for Greek Micro ; Abbreviating Units; Too Little; Guessing Missing Units ; Expanding from Three Digits ; Converting Colors to Numbers ; Determining Component Values with a Multimeter ; Base Subjects Covered; Chapter 6: Robot Line-Following; Defining the Course Conditions; Surface Materials ; Course Lighting; Defining the Line ; Picking Line Marking Material; Curving and Crossing Lines
Summarizing Course Conditions

Sommario/riassunto

"I wrote this book because I love building robots. I want you to love building robots, too. It took me a while to learn about many of the tools and parts in amateur robotics. Perhaps by writing about my experiences, I can give you a head start."--David Cook Robot Building for Beginners, Third Edition provides basic, practical knowledge on getting started in amateur robotics. There is a mix of content: from serious reference tables and descriptions to personal stories and humorous bits. The robot described and built in this book is battery powered and about the size of a lunch box. It is autonomous; that is, it isn't remote controlled. The book is broken up into small chapters, suitable for bedtime (or bathroom) reading. The characteristics and purposes of each major component (resistor, transistor, wire, and motor) are described, followed by a hands-on experiment to demonstrate. Not only does this help the reader to understand a particular piece, but it also prepares them with processes to learn new parts on their own. An appendix offers an introduction to 3D printing and parts of the robot can, as an alternative, be "printed" using a 3D printer. The master project of the book is a simple, entertaining, line-following robot.