



# The Robotics Primer (Intelligent Robotics and Autonomous Agents series)

By Maja J. Mataric

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By Maja J. Mataric

*The Robotics Primer* offers a broadly accessible introduction to robotics for students at pre-university and university levels, robot hobbyists, and anyone interested in this burgeoning field. The text takes the reader from the most basic concepts (including perception and movement) to the most novel and sophisticated applications and topics (humanoids, shape-shifting robots, space robotics), with an emphasis on what it takes to create autonomous intelligent robot behavior. The core concepts of robotics are carried through from fundamental definitions to more complex explanations, all presented in an engaging, conversational style that will appeal to readers of different backgrounds. *The Robotics Primer* covers such topics as the definition of robotics, the history of robotics ("Where do Robots Come From?"), robot components, locomotion, manipulation, sensors, control, control architectures, representation, behavior ("Making Your Robot Behave"), navigation, group robotics, learning, and the future of robotics (and its ethical implications). To encourage further engagement, experimentation, and course and lesson design, *The Robotics Primer* is accompanied by a free robot programming exercise workbook that implements many of the ideas on the book on iRobot platforms.

*The Robotics Primer* is unique as a principled, pedagogical treatment of the topic that is accessible to a broad audience; the only prerequisites are curiosity and attention. It can be used effectively in an educational setting or more informally for self-instruction. *The Robotics Primer* is a springboard for readers of all backgrounds -- including students taking robotics as an elective outside the major, graduate students preparing to specialize in robotics, and K-12 teachers who bring robotics into their classrooms.

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### **Editorial Review**

#### **Review**

As with electronics and then computers, the world is about to be transformed yet again by the age of robotics. Every age needs its technology to be adopted by smart kids and dedicated hobbyists to provide the tide of people who will carry out the transformation. *The Robotics Primer* is a bridge between academia and everyone, and its readers will become the crucibles of the new age.

(Rodney Brooks, Director, MIT Computer Science and Artificial Intelligence Lab)

Dr. Mataric has made a complex subject accessible to students of all ages. Students can learn in conjunction with hands-on experience using the robot workbook available online. This primer and workbook will give the student a first glimpse at the incredible possibilities of robotics.

(Helen Greiner, Chairman and Co-founder of iRobot)

*The Robotics Primer* is a rare combination of lively and enthusiastic as well as authoritative, written by one of the leaders of the field. If this doesn't excite a new generation of roboticists, I'm not sure what will! A remarkable contribution: a fun, straightforward, and gentle introduction to robotics, that is accessible to virtually anyone interested in gaining such knowledge. I know of no better text to bootstrap aspiring roboticists into the language, knowledge, and culture of the field.

(Ronald C. Arkin, Regents Professor & Director of the Mobile Robot Laboratory, Georgia Institute of Technology)

This book is a very enthusiastic introduction to robotics. It is an excellent textbook for anyone designing or taking an undergraduate introductory course, and great reading for those interested in learning about robots.

(Daniela Rus, Department of Electrical Engineering & Computer Science, MIT)

#### **About the Author**

Maja J. Mataric is Professor of Computer Science and Neuroscience and Director of the Center for Robotics and Embedded Systems at the University of Southern California, where she is also Codirector of the Robotics Research Lab and Senior Associate Dean for research in the Viterbi School of Engineering.

### **Users Review**

#### **From reader reviews:**

#### **Charles Grove:**

Nowadays reading books be than want or need but also get a life style. This reading practice give you lot of

advantages. The advantages you got of course the knowledge the actual information inside the book that will improve your knowledge and information. The knowledge you get based on what kind of book you read, if you want send more knowledge just go with education and learning books but if you want truly feel happy read one together with theme for entertaining including comic or novel. The The Robotics Primer (Intelligent Robotics and Autonomous Agents series) is kind of reserve which is giving the reader erratic experience.

#### **Rolando Gil:**

People live in this new day time of lifestyle always try to and must have the time or they will get lots of stress from both day to day life and work. So , whenever we ask do people have free time, we will say absolutely indeed. People is human not really a huge robot. Then we ask again, what kind of activity are there when the spare time coming to you actually of course your answer will certainly unlimited right. Then ever try this one, reading books. It can be your alternative in spending your spare time, often the book you have read is usually The Robotics Primer (Intelligent Robotics and Autonomous Agents series).

#### **Sandra Williams:**

In this era which is the greater man or woman or who has ability in doing something more are more important than other. Do you want to become one of it? It is just simple solution to have that. What you must do is just spending your time almost no but quite enough to experience a look at some books. On the list of books in the top list in your reading list is The Robotics Primer (Intelligent Robotics and Autonomous Agents series). This book which is qualified as The Hungry Slopes can get you closer in turning into precious person. By looking upwards and review this book you can get many advantages.

#### **Harold Morris:**

What is your hobby? Have you heard in which question when you got students? We believe that that problem was given by teacher for their students. Many kinds of hobby, Everyone has different hobby. And also you know that little person including reading or as looking at become their hobby. You have to know that reading is very important as well as book as to be the issue. Book is important thing to provide you knowledge, except your own personal teacher or lecturer. You will find good news or update with regards to something by book. Many kinds of books that can you choose to use be your object. One of them are these claims The Robotics Primer (Intelligent Robotics and Autonomous Agents series).

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