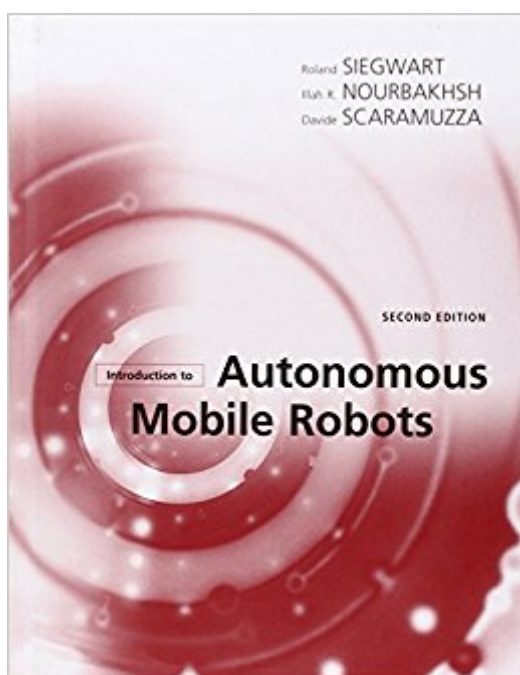The book was found

Introduction To Autonomous Mobile Robots (Intelligent Robotics And Autonomous Agents Series)

Synopsis

Mobile robots range from the Mars Pathfinder mission's teleoperated Sojourner to the cleaning robots in the Paris Metro. This text offers students and other interested readers an introduction to the fundamentals of mobile robotics, spanning the mechanical, motor, sensory, perceptual, and cognitive layers the field comprises. The text focuses on mobility itself, offering an overview of the mechanisms that allow a mobile robot to move through a real world environment to perform its tasks, including locomotion, sensing, localization, and motion planning. It synthesizes material from such fields as kinematics, control theory, signal analysis, computer vision, information theory, artificial intelligence, and probability theory. The book presents the techniques and technology that enable mobility in a series of interacting modules. Each chapter treats a different aspect of mobility, as the book moves from low-level to high-level details. It covers all aspects of mobile robotics, including software and hardware design considerations, related technologies, and algorithmic techniques.This second edition has been revised and updated throughout, with 130 pages of new material on such topics as locomotion, perception, localization, and planning and navigation. Problem sets have been added at the end of each chapter. Bringing together all aspects of mobile robotics into one volume, Introduction to Autonomous Mobile Robots can serve as a textbook or a working tool for beginning practitioners.Curriculum developed by Dr. Robert King, Colorado School of Mines, and Dr. James Conrad, University of North Carolina-Charlotte, to accompany the National Instruments LabVIEW Robotics Starter Kit, are available. Included are 13 (6 by Dr. King and 7 by Dr. Conrad) laboratory exercises for using the LabVIEW Robotics Starter Kit to teach mobile robotics concepts.

Book Information

Series: Intelligent Robotics and Autonomous Agents series

Hardcover: 472 pages

Publisher: The MIT Press; second edition edition (February 18, 2011)

Language: English

ISBN-10: 0262015358

ISBN-13: 978-0262015356

Product Dimensions: 7 x 0.8 x 9 inches

Shipping Weight: 2 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 stars   11 customer reviews

Best Sellers Rank: #90,592 in Books (See Top 100 in Books)   #30 in Books > Textbooks >

Computer Science > Artificial Intelligence   #61 in Books > Computers & Technology > Computer Science > Robotics   #80 in Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Robotics & Automation

Customer Reviews

This book is well suited for graduate courses in robotics, where it can provide a synthesis of the solutions and rapidly introduce problems for research. (G. Gini Computing Reviews)This text provides a clear and systematic development of the essentials of mobile robotics. The second edition adds up-to-date material to a book that has already been adopted in robotics classes worldwide. With this guide in hand, students and readers will swiftly navigate the field toward more advanced systems. (Raja Chatila, LAAS-CNRS, France)

Davide Scaramuzza is Senior Researcher at the Autonomous Systems Lab at ETH ZÃ rich, where he is also a lecturer and leader of the European project sFly.Roland Siegwart is Professor of Autonomous Systems and Director of the Center for Product Design at the Institute of Robotics and Intelligent Systems, ETH ZÃ rich.Illah R. Nourbakhsh is Associate Professor of Robotics in the Robotics Institute, School of Computer Science, at Carnegie Mellon University.

I'm in my third year of studies as an undergraduate CS major, and I just read this book over Christmas break. (I admit there is a difference between reading a book and being able to apply all the knowledge contained therein, but I think I did reach a fairly good grasp of the material.)The most useful parts to me were 1) a derivation of various robot kinematic models, 2) the variety of probabilistic localization models, and 3) the descriptors of basic computer vision algorithms. The book doesn't hold your hand through the *implementation* of anything, which can make it harder to visualize at times. It does provide enough detail, though, that I could implement (with some effort) most, if not all, of the algorithms and techniques in the book. I really liked that this book provided a survey of topics, rather than going into great detail on one particular issue. There are a large number of references (books, websites, and papers) for each topic in the book, so the interested reader can pursue their favorite component of the book further.I felt the path planning and robot software architecture sections in Ch 6 were a little "rushed" and the vision section seemed long when compared with the rest of the book, but overall the authors spent a suitable amount of time discussing each topic.

A serious robot motion book for the student roboticist. This is a text book for an online class and college level classes. Better brush up on linear algebra before reading this book. Not a problem for someone in college with a fresh background in math. The subject of robot motion is covered at a nice level, and other reviewers do a better job than myself in covering the book.

Pretty good, great for working through math problems and understanding the difficult matrices for robotics. A lot of focus on robotic arms and matrices, good for my intro to robotics class.

Just as the title says, this book introduces the reader to mobile robotics and the aspects that need to be taken into account when designing mobile robots, and it does that in a good way. To be precise, the discussions in the book are quite easy to follow, contributing to a pleasant reading experience; moreover, many useful references are supplementing the topics covered.That being said, "Introduction to Autonomous Mobile Robots" is probably not the only text that one would consult when working on mobile robotics, as the authors don't go into details for some of the topics, but it is definitely a good start. Give it a try.

Good book that covers the most usable concepts of autonomous robots.

This book is a comprehensive one full of usefull and practical technical details and applications. Nice and good work and Thanks!

Introduction to Autonomous Mobile Robots (Intelligent Robotics and Autonomous Agents series) . It does not have a great update from the first edition.

This is one of the better books on autonomous robots. Good read for anybody interested in the subject. Great quality of info!

Introduction to Autonomous Mobile Robots (Intelligent Robotics and Autonomous Agents series) The Robotics Primer (Intelligent Robotics and Autonomous Agents series) Evolutionary Robotics: The Biology, Intelligence, and Technology of Self-Organizing Machines (Intelligent Robotics and Autonomous Agents) Robots and Robotics High Risk Robots Macmillan Library (Robots and Robotics - Macmillan Library) Robotics: Everything You Need to Know About Robotics From Beginner to Expert (Robotics 101, Robotics Mastery) The Robotics Club: Teaming Up to Build

Robots (Robotics (Library)) Go Mobile: Location-Based Marketing, Apps, Mobile Optimized Ad Campaigns, 2D Codes and Other Mobile Strategies to Grow Your Business Robotics, Vision and Control: Fundamental Algorithms in MATLAB (Springer Tracts in Advanced Robotics) Robotics, Vision and Control: Fundamental Algorithms In MATLAB, Second Edition (Springer Tracts in Advanced Robotics) Robotics: Discover The Robotic Innovations Of The Future - An Introductory Guide to Robotics Robotics: Everything You Need to Know About Robotics from Beginner to Expert National Geographic Kids Everything Robotics: All the Photos, Facts, and Fun to Make You Race for Robots House of Robots (House of Robots Series Book 1) Making Simple Robots: Exploring Cutting-Edge Robotics with Everyday Stuff Robots at Home (Robotics in Our World) Cool Colleges: For the Hyper-Intelligent, Self-Directed, Late Blooming, and Just Plain Different (Cool Colleges: For the Hyper-Intelligent, Self-Directed, Late Blooming, & Just Plain Different) Cable-Driven Parallel Robots: Proceedings of the Third International Conference on Cable-Driven Parallel Robots (Mechanisms and Machine Science) Paper Robots: 25 Fantastic Robots You Can Build Yourself! Robots, Robots Everywhere! (Little Golden Book) House of Robots: Robots Go Wild!