

Computational Principles of Mobile Robotics

By Gregory Dudek, Michael Jenkin

Download Read Online

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin

Mobile robotics is a multidisciplinary field involving both computer science and engineering. Addressing the design of automated systems, it lies at the intersection of artificial intelligence, computational vision, and robotics. This textbook for advanced undergraduates and graduate students emphasizes algorithms for a range of strategies for locomotion, sensing, and reasoning. It concentrates on wheeled and legged mobile robots but discusses a variety of other propulsion systems. The new edition includes advances in robotics and intelligent machines over the last ten years, including significant coverage of SLAM (simultaneous localization and mapping) and multi-robot systems. It includes additional mathematical background and an extensive list of sample problems. Various mathematical techniques that were assumed in the first edition are now briefly introduced in appendices at the end of the text to make the book more self-contained. Researchers as well as students in the field of mobile robotics will appreciate this comprehensive treatment of state-of-the-art methods and key technologies.

Download Computational Principles of Mobile Robotics ...pdf

Read Online Computational Principles of Mobile Robotics ...pdf

Computational Principles of Mobile Robotics

By Gregory Dudek, Michael Jenkin

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin

Mobile robotics is a multidisciplinary field involving both computer science and engineering. Addressing the design of automated systems, it lies at the intersection of artificial intelligence, computational vision, and robotics. This textbook for advanced undergraduates and graduate students emphasizes algorithms for a range of strategies for locomotion, sensing, and reasoning. It concentrates on wheeled and legged mobile robots but discusses a variety of other propulsion systems. The new edition includes advances in robotics and intelligent machines over the last ten years, including significant coverage of SLAM (simultaneous localization and mapping) and multi-robot systems. It includes additional mathematical background and an extensive list of sample problems. Various mathematical techniques that were assumed in the first edition are now briefly introduced in appendices at the end of the text to make the book more self-contained. Researchers as well as students in the field of mobile robotics will appreciate this comprehensive treatment of state-of-the-art methods and key technologies.

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin Bibliography

- Sales Rank: #701855 in Books
- Brand: Brand: Cambridge University Press
- Published on: 2010-07-26
- Original language: English
- Number of items: 1
- Dimensions: 9.96" h x .83" w x 8.46" l, 1.55 pounds
- Binding: Paperback
- 406 pages

Download Computational Principles of Mobile Robotics ...pdf

Read Online Computational Principles of Mobile Robotics ...pdf

Download and Read Free Online Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin

Editorial Review

Review
"This book is an indispensable tool for any--both pre-university and university--course on mobile robotics. In relation to the first edition, this current one has been sufficiently updated. I recommend this book to researchers--particularly those who study localization or mapping--and doctoral students who are interested in investigating the latest approaches and techniques in the mobile robotics field."
RAMON GONZALEZ SANCHEZ, Computing Reviews

"This work (1st. ed., CH, Nov'00, 38-1584) became an immediate resource for this reviewer for both research and teaching purposes. In the multidisciplinary area of robotics, it is not uncommon to find textbooks that describe the algorithms involved in robotic control, perception, planning, etc., but fail to provide the reader with the critical details necessary for implementation. For the majority of topics, Dudek (McGill Univ., Canada) and Jenkin (York Univ., Canada) present the necessary math to perform the computation and in some cases also provide pseudocode. References are included throughout. The text really shines in its handling of algorithms for perception, sensor fusion, and path planning. The appendixes review probability, statistics, linear systems, filters, and Markov models, but not with enough depth to provide an introduction to someone new to any one of these topics. This work is a bit too advanced for an introductory course on robotics, but it would be a great resource for an intermediate or advanced course on mobile robotics."
R.S. STANSBURY, Embry-Riddle Aeronautical University

"...a great resource for an intermediate or advanced course on mobile robotics." CHOICE

About the Author
Gregory Dudek is Professor of Computer Science and Director of the School of Computer Science at McGill University. He holds a James McGill Chair and is a member of the Center for Intelligent Machines, and has been co-author of over 150 refereed publications on robotics and computer vision.

Michael Jenkin is a Professor of Computer Science and Engineering at York University. He has co-edited a series of eight books on human and machine vision.

Users Review

From reader reviews:

George Green:

Do you have favorite book? If you have, what is your favorite's book? Book is very important thing for us to find out everything in the world. Each e-book has different aim or maybe goal; it means that reserve has different type. Some people feel enjoy to spend their time to read a book. They may be reading whatever they consider because their hobby is actually reading a book. What about the person who don't like looking at a book? Sometime, man feel need book if they found difficult problem as well as exercise. Well, probably you will need this Computational Principles of Mobile Robotics.

Enrique McLean:

Here thing why this Computational Principles of Mobile Robotics are different and trusted to be yours. First of all examining a book is good nonetheless it depends in the content of it which is the content is as delicious as food or not. Computational Principles of Mobile Robotics giving you information deeper and different ways, you can find any guide out there but there is no guide that similar with Computational Principles of Mobile Robotics. It gives you thrill looking at journey, its open up your own eyes about the thing that will happened in the world which is maybe can be happened around you. You can actually bring everywhere like in area, café, or even in your means home by train. Should you be having difficulties in bringing the published book maybe the form of Computational Principles of Mobile Robotics in e-book can be your alternate.

Harold Walsh:

Computational Principles of Mobile Robotics can be one of your nice books that are good idea. All of us recommend that straight away because this book has good vocabulary that can increase your knowledge in vocab, easy to understand, bit entertaining but still delivering the information. The article writer giving his/her effort to put every word into satisfaction arrangement in writing Computational Principles of Mobile Robotics but doesn't forget the main level, giving the reader the hottest as well as based confirm resource info that maybe you can be among it. This great information can drawn you into new stage of crucial imagining.

Raymond Albanese:

That publication can make you to feel relax. This kind of book Computational Principles of Mobile Robotics was multi-colored and of course has pictures on there. As we know that book Computational Principles of Mobile Robotics has many kinds or category. Start from kids until teenagers. For example Naruto or Investigator Conan you can read and believe you are the character on there. Therefore not at all of book tend to be make you bored, any it offers you feel happy, fun and relax. Try to choose the best book for yourself and try to like reading this.

Download and Read Online Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin #K7DOASI6JXC

Read Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin for online ebook

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin books to read online.

Online Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin ebook PDF download

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin Doc

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin Mobipocket

Computational Principles of Mobile Robotics By Gregory Dudek, Michael Jenkin EPub