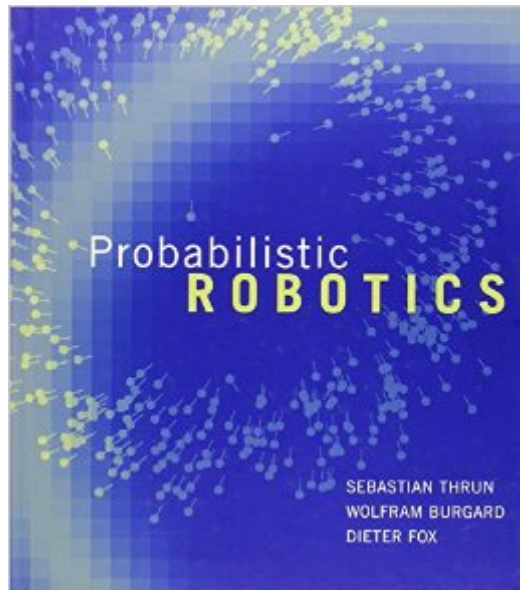


The book was found

# Probabilistic Robotics (Intelligent Robotics And Autonomous Agents Series)



## Synopsis

Probabilistic robotics is a new and growing area in robotics, concerned with perception and control in the face of uncertainty. Building on the field of mathematical statistics, probabilistic robotics endows robots with a new level of robustness in real-world situations. This book introduces the reader to a wealth of techniques and algorithms in the field. All algorithms are based on a single overarching mathematical foundation. Each chapter provides example implementations in pseudo code, detailed mathematical derivations, discussions from a practitioner's perspective, and extensive lists of exercises and class projects. The book's Web site, [www.probablistic-robotics.org](http://www.probablistic-robotics.org), has additional material. The book is relevant for anyone involved in robotic software development and scientific research. It will also be of interest to applied statisticians and engineers dealing with real-world sensor data.

## Book Information

Series: Intelligent Robotics and Autonomous Agents series

Hardcover: 672 pages

Publisher: The MIT Press; Intelligent Robotics and Autonomous Agents series edition (August 19, 2005)

Language: English

ISBN-10: 0262201623

ISBN-13: 978-0262201629

Product Dimensions: 8 x 1.1 x 9 inches

Shipping Weight: 3 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 stars Â Â See all reviews Â (35 customer reviews)

Best Sellers Rank: #138,573 in Books (See Top 100 in Books) #104 in Â Books > Computers & Technology > Computer Science > Robotics #133 in Â Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Robotics & Automation #394 in Â Books > Computers & Technology > Hardware & DIY

## Customer Reviews

This is really an amazing book - it more than fulfilled my expectations. It starts from the very basics of probability theory and clearly derives Kalman Filtering, Particle Filtering, Probabilistic Motion and Probabilistic Perception in the first 6 chapters. From there it moves on to talk about Localization and Mapping completely separately (which I appreciated, since the two topics are far easier to comprehend independently) in chapters 7 and 8 and then finally introduces SLAM (the main topic of

the book) in chapter 9. From there it goes on to discuss various SLAM algorithms and implementations, and finally rounds out with planning and control (that is, the practical application of SLAM algorithms). I can't imagine a more well-researched academic work. Every point is backed up with examples and illustrations, and every algorithm is derived rigorously. Even better, the mathematical derivations are set apart from the main text so that a more "casual" reader can skip over the derivations and still get some benefit from the text (and believe me, the math parts of this book are very involved!). The authors assume a working knowledge of trigonometry, calculus and linear algebra (although you could likely make some sense of the book even if you're rusty in any of these areas). However, since the book is about probability, you'll probably need some background in probability theory to get any value from this text. Chapter 2 contains a refresher on probability theory, but I doubt it would be enough to decipher the later chapters if you had no background in the subject.

[Download to continue reading...](#)

Probabilistic Robotics (Intelligent Robotics and Autonomous Agents series) Introduction to Autonomous Mobile Robots (Intelligent Robotics and Autonomous Agents series) Principles of Robot Motion: Theory, Algorithms, and Implementations (Intelligent Robotics and Autonomous Agents series) Designing Sociable Robots (Intelligent Robotics and Autonomous Agents series) Robotics: Everything You Need to Know About Robotics From Beginner to Expert (Robotics 101, Robotics Mastery) 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) Jeff Herman's Guide to Book Publishers, Editors and Literary Agents: Who They Are, What They Want, How to Win Them Over (Jeff Herman's Guide to Book Editors, Publishers, and Literary Agents) Robotics: The Beginner's Guide to Robotic Building, Technology, Mechanics, and Processes (Robotics, Mechanics, Technology, Robotic Building, Science) Robotics: Everything You Need to Know About Robotics from Beginner to Expert Robotics: Discover The Robotic Innovations Of The Future - An Introductory Guide to Robotics Probability on Trees and Networks (Cambridge Series in Statistical and Probabilistic Mathematics) A User's Guide to Measure Theoretic Probability (Cambridge Series in Statistical and Probabilistic Mathematics) Stochastic Processes (Cambridge Series in Statistical and Probabilistic Mathematics) The Probabilistic Method (Wiley Series in Discrete Mathematics and Optimization) Build Your Own Autonomous NERF Blaster: Programming Mayhem with Processing and Arduino Autonomous Vehicle Technology: A Guide for Policymakers (Transportation, Space, and Technology Program) Robot Programming: A Guide to Controlling Autonomous Robots Probabilistic Modelling in Bioinformatics and Medical Informatics Bayesian Methods for Hackers: Probabilistic Programming and Bayesian Inference (Addison-Wesley Data &

