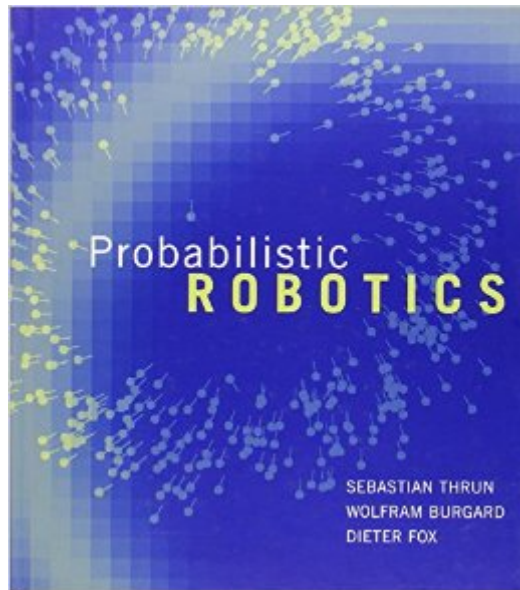# Probabilistic Robotics (Intelligent Robotics And Autonomous Agents Series)

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.probabilistic-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

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

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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 derivesKalman Filtering, Particle Filtering, Probabilistic Motion and ProbabilisticPerception in the first 6 chapters. From there it moves on to talk aboutLocalization and Mapping completely separately (which I appreciated, sincethe two topics are far easier to comprehend independently) in chapters 7 and8 and then finally introduces SLAM (the main topic of

the book) in chapter9. From there it goes on to discuss various SLAM algorithms and implementations,and finally rounds out with planning and control (that is, the practicalapplication of SLAM algorithms).I can't imagine a more well-researched academic work. Every point is backedup with examples and illustrations, and every algorithm is derived rigorously.Even better, the mathematical derivations are set apart from the main textso that a more "casual" reader can skip over the derivations and still getsome benefit from the text (and believe me, the math parts of this book arevery involved!). The authors assume a working knowledge of trigonometry,calculus and linear algebra (although you could likely make some sense of thebook even if you're rusty in any of these areas). However, since the bookis about probability, you'll probably need some background in probabilitytheory to get any value from this text. Chapter 2 contains a refresher onprobability theory, but I doubt it would be enough to decipher the laterchapters if you had no background in the subject.

Probabilistic Robotics (Intelligent Robotics and Autonomous Agents series) Probability on Trees and Networks (Cambridge Series in Statistical and Probabilistic Mathematics) The Probabilistic Method (Wiley Series in Discrete Mathematics and Optimization) Robot Programming: A Guide to Controlling Autonomous Robots 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 Mouth Wide Open: How To Ask Intelligent Questions About Dental Implants and Actually Understand What Your Dentist Is Saying Agents of Empire: Knights, Corsairs, Jesuits and Spies in the 16th-Century Mediterranean World Sleisenger and Fordtran's Gastrointestinal and Liver Disease Review and Assessment (Sleisenger and Fordtrans Gastrointestinal and Liver) Teaching Digital Technologies: Computational Thinking, coding and robotics in the classroom Windows 10: From Beginner To Expert: A Complete User Guide to Microsoft's Intelligent New Operating System (Now With Bonus Chapter) (Windows - General ... General Guide, Windows - General Mastery,) Windows 10: (A Beginner to Expert Manual) A Complete User Guide to Microsoft's Intelligent New Operating System Intelligent Testing with the WISC-V Trilingual by Six: The sane way to raise intelligent, talented children Guide to Literary Agents 2016: The Most Trusted Guide to Getting Published (Market) The 2016 Guide to Manuscript Publishers: 104 Traditional Book Publishers That Don't Require Agents Eat Fat and Get Thin, Fit, and Healthier Than Ever Before!: Easy Diet and Delicious Cookbook: Recipes for Dramatic and Sustainable Weight Loss (Includes 21 Day Meal Plan) Best Plants for New Mexico Gardens and Landscapes: Keyed to Cities and Regions in New Mexico and Adjacent Areas, Revised and Expanded Edition Amino Acids: The Way to Health and Wellness: Find Health and Healing from Depression, Addictions, Obesity, Anxiety, Sexual Issues,

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